AMERICAN/ARTISAN Tarowallerance Taro

Vol. 83. No. 21.

620 SOUTH MICHIGAN AVENUE, CHICAGO, MAY 27, 1922

\$2.00 Per Year.

Sell This Remarkable Heater Which Burns Soft Coal Without Smoke—the Superior SUPER-SMOKELESS Furnace

Superior Super-Smokeless Furnaces have been tested in soft coal regions under every-day conditions. They entirely eliminate the smoke problem and operate successfully with the cheapest grades of soft coal-the smoke and gases ordinarily wasted are utilized as fuel.

The Super-Smokeless feature is secured by the admission of heated air (oxygen) above the combustion dome, on the principle of the Bunsen Burner. Heavy smoke and gases are changed to extremely hot flames that swirl through the radiator, generating more heat from less coal than ever before possible with a soft coal furnace.

Get the agency for Super-Smokeless Furnaces—pipe or pipeless. Satisfy a big, definite demand for heating plants that can burn soft coal without smoke. Replace furnaces and boilers of equal heating capacity with Super-Smokeless Furnaces which are cleaner in operation, use less fuel and burn the cheapest grades of coal successfully.

Write today—specify whether you wish to sell pipe or pipeless Super-Smoke-less Furnaces, or both. Don't delay if you wan: this money-making agency—it means you can control the heating business in your territory.

UTICA HEATER COMPANY

UTICA, New York 218-220 W. Kinzie St., Chicago, Ill.





HEATING SYSTEM



One-piece grating, bar steel. 82% open area.

Two-channel air space in sectional inner casing. Super insulator.

Large combustion chamber is a big fuel saver.

One-piece smoke pipe with check and damper. Positive fire control.

Scuttle firepot. Straight and very deep. Full view of grate. Heaviest pot made.

Very deep ashpit. Square back to fit square nose shovel. Adjustable water pan evaporates 10 to 25 gallons per day.

Fins increase radiating surface 45%. An air-cooled heating machine.

Long way of feed door is horizontal. Compare with others.

Smoke consuming device feeds oxygen 14 inches above firepot.

Waterpan for pipe job all inside of front —the hottest place

Extra-heavy conecenter dump grate. Burns all fuels.

Air space under ashpit with outlet and supply. No heat loss into floor.







Thoroughly Covers the Hardware, Stove, Sheet Metal, and Warm Air Heating and Ventilating Interests

AMERICAN ARTISAN Hardware Record

Address all communications and remittances to AMERICAN ARTISAN AND HARDWARE RECORD 620 South Michigan Avenue Chicago, Illinois

PUBLISHED EVERY SATURDAY BY THE ESTATE OF DANIEL STERN

Eastern Representatives: C. C. Blodgett and W. C. White, 1478 Broadway, New York City Yearly Subscription Price: United States \$2.00: Canada \$3.00: Foreign \$4.00

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CHICAGO, MAY 27, 1922.

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THE THREE THINGS VITAL IN ADVERTISING.

Just as three things are necessary to complete a sale by the spoken word so the same three things are necessary in completing a sale by the written word.

Did you ever see a salesman make a sale without showing the article, or without explaining what the article is, what purpose it will serve, how well it will serve that purpose and without at some time during the transaction telling the prospect what the article will cost him?

Even if the article happens to be wire nails, it is necessary to say something about the size or kind—and surely it is necessary to ask the purchaser for the money.

And yet, we find hardware merchants who in this day and age are unwilling to quote prices in their advertisements!

Sometimes they will say that a definite price quotation detracts from the dignity of their business, because by quoting a price they sort of put themselves on the level of the chronic price cutter.

Sometimes their excuse is that an openly quoted price makes it possible for their competitor to offer the same article at a lower price.

Sometimes their only explanation is that they have never quoted prices in their advertisements.

The other day we visited a hardware store where practically everything was marked in characters instead of plain price figures.

The owner explained that the people from whom he drew most of his trade were in the habit of trying to beat his prices down, so it was necessary to ask more than he really expected to obtain.

And yet, these very same people bought their groceries, dry goods, clothing, shoes and other items at stores in the same block where the plain price figures was the rule!

There can be only two reasons for the "blind" price.

Either the dealer is dishonest—in that he is unwilling to give Mrs. Jones the same deal that he gives to Mrs. Smith, and dishonesty is the only word that fits such a case.

Or he is a weak sister, without the backbone to stand up for his wares and the price to which he is entitled.

There was a time when even Marshall Field and John Wanamaker had their wares marked in characters, but that period is so far back that few of those who are actively in business today can remember it.

And today the department manager in any of their stores who would propose such a method would be in danger of losing his position and being sent to a psychopathic hospital for observation.

What is the principal reason for the gigantic size of these mercantile enterprises?

Just one set rule: Sell the best value you can for the money you ask—and be specific in quoting your price:

That rule holds good both in personal selling and in selling by advertisements.

And keep this in mind-

The quoted price does not mean a cut price.

Random Notes and Sketches. By Sidney Arnold

R. W. MENK of Excelsior Steel Furnace Company, Chicago, Illinois, president Western Warm Air Furnace & Supply Association, sends me the following story, with the comment that it reminds him of the way some of the furnace men answer questions pertaining to the lay out a warm air heater job:

A young foreigner was being tried in court and the questioning by the lawyer for the prosecution began.

"Now, Laszky, what do you do?"
"Vat do I do, ven?"

"When you work, of course."

"Vy, I vork."

"I know, but what at?"

"At a bench."

"I know—I know, but where do you work at a bench?"

"In a factory."

"What kind of a factory?"

"Brick."

"Ah, now we're getting there. The factory makes bricks?"

"No, de factory is made of bricks."

"Oh, Lord! Laszky, what do you make in that factory?"

"Eight dollars a veek."

"No, no! What does the factory make?"

"I dunno. A lot of money, I tink."

"No, listen. What kind of goods does the factory produce?"

"Oh, good goods."

"But what kind of good goods?"

"The best dere is."

"Of what?"

"Of dose goods." .

"Your honor," said the lawyer, "I give up."

In explaining warm air heaters to customers it is well to avoid all technical expressions, says W. T. Strangward, general manager Forest City Foundry & Manufacturing Company, Cleveland, Ohio. He cites an example:

"Are you sure you have shown

me all the principal parts of this car?" asked the fair prospective purchaser.

"Yes, madam, all the main ones," returned the dealer.

"Well, then, where is the depreciation? Tom told me that was one of the biggest things about a car."

A. N. Brayer, secretary Cooperative Foundry Company, Rochester, New York, puts me under obligation to him for the laugh which I got from this story:

"What shall we do tonight?" asked one college man of his chum.

"Let's toss for it," suggested the other.

"All right," agreed the first. "If it's heads we'll go to a dance; if it's tails we'll go to the movie; if it stands on edge, we'll study."

A new version of the well-known advertising slogan, "Eventually, Why Not Now?" is furnished as follows by E. C. ("Buck") Taylor, president of the Wisconsin Auxiliary:

Mandy and Rastus had become engaged, but Mandy still had misgivings.

"Big boy," she murmured one evening, "Ah knows yo' loves me, but huccum you comes roun' wantin' to marry me so soon after yo' loses yo' job?"

"Sho, Mandy," he replied reassuringly, "what's de difference does Ah quit work and marry yo', or marry yo' an' quit work?"

* * *

Talking about percentage as applied to volume of sales, E. C. Haas of Le Mars, Iowa, field secretary Iowa Retail Hardware Association, says that it is still somewhat of a mystery to some dealers—which reminds him of a story:

A colored revival was in full blast, and one old fellow was exhorting the people to contribute generously. "Look what de Lawd's done fo' you-all, bredren!" he shouted. "Give Him a portion of all you has. Give Him a tenth. A tenth belongs to de Lawd!"

"Amen!" yelled a perspiring member of the congregation, overcome by emotion. "Glory to de Lawd! Give Him mo'. Give Him a twentieth!"

George B. Carr of Carr Supply Company, Chicago, Illinois, was walking East in Lake Street the other day when he overheard the following conversation:

A prim and proper young miss was much horrified on the street to find a small boy, apparently not over six years old, smoking a cigarette.

"Little boy," she commanded. "Throw down that horrid thing this minute."

"Go chase yerself, lady," answered the infant disdainfully. "Hunt yer own. I found dis one meself."

Information is not of much value unless it is put to some use, declares J. C. Knox of Waterloo Register Company, Waterloo, Iowa.

He quotes a case to the point:

A guest hurried up to the hotel clerk's counter. He had just ten minutes to pay his bill, reach the station and board his train.

"Hang it!" he exclaimed. "I've forgotten something. Here, boy, run up to my room—Number 427—and see if I left my pajamas and shaving kit. Hurry, I've only five minutes now."

The boy hurried. In four minutes he returned, out of breath.

"Yes, sir," he panted. "You left them."

An almost infallible cure for insomnia has been discovered, says H. E. Marsh, manager of sales, Marsh Lumber Company, Dover, Ohio. Here it is:

Every evening keep repeating to yourself: "I am a night watchman, I am a night watchman, I am a night watchman."

Kitchen Ranges Can Be Sold Profitably in Summer Months.

Manufacturer Gives Cogent Reasons for Continual Selling Effort All Year.

THE season is over. It is no use trying to sell kitchen ranges now. The weather is getting warm, and you simply can not get women interested in them, and of course if the women are not interested, the men folks are not going to spend the money."

I believe that I am giving voice in the foregoing paragraph to the opinion of nine out of ten hardware dealers—and yet I know that every one of these nine is wrong.

You know the story of the jury which could not come to an agreement and therefore was discharged by the judge.

After they left the court room one of the jurors was heard to remark to one of his friends: "That was the most stubborn lot of men that I have ever had to do with. It was simply out of the question for any one to convince them that I was right."

The jury stood eleven to one, and the speaker was the sole person to stand out against agreement. He felt that all the eleven were stubborn.

At the risk of being called stubborn I am going on record and say that the hardware dealer who says that kitchen ranges can not be sold in June or July, either does not know what he is talking about or is unwilling to make the extra effort that it takes to sell them during the summer months.

Kitchen ranges are being sold, right now, in territory where it is eighty and ninety in the shade, right now.

And they are being sold in numbers large enough to justify the effort. The profits and the turnover is of the sort that pleases both the manufacturer and the banker, and of course the hardware merchant is happy.

How do I know?

From the fact that the orders

from the hardware merchants for these ranges are passing over my desk every day in the week.

A kitchen range does no more belong in the class of seasonable merchandise than does sugar or

It is an article which is in use 365 days in the year—three times a day.

So what real reason is there for not making a real effort to sell kitchen ranges every day in every month during the entire year?

I shall admit right here that what I am saying here has a selfish purpose—I want to make and sell more kitchen ranges—but unless what I do say is based on actual facts my statements will have just the opposite effect. I can make and move ranges at a profit to me only when the hardware merchants who buy these ranges from me can sell them as fast as I make them, and sell them at a fair profit to themselves.

So after all—the bit of suggestion that I have thrown out in this article is for the benefit of the merchant fully as much as for me.

A real profitable business on kitchen ranges can only be built up and retained by a continued hunt for prospects.

Simply buying a few ranges and placing them on your sales floor will not build a real business for you—any more than sitting on a tree stump with a gun across your legs and waiting for game to pass by will fill your bag—you have to seek out the game.

Every month some young people are getting married.

Do you know who they are, and do you know when the happy event will take place?

That list of prospects is an everchanging one.

How many ranges did you sell to Mr. and Mrs. Newlywed or Tobe-wed last year. Is there any good reason why you should not sell more to that class of customers than last year?

And now I am going to touch on something that some of you will not like.

My instructions to our salesmen is this:

"Make every town that has a hardware store and sign up a merchant in every town, so far as possible, even if the towns are only seven or ten miles apart."

I can just hear the howl that goes up when you read this.

And yet, these instructions are for the good of our customers as well as for our interests.

Here is Mrs. Jones who is figuring on buying a range. She has been approached by Smith who sells my ranges in Poseytown and also by Williams who sells some other make. She is thinking the matter over.

One day she has business in the next town down the line, and she sees my range in one of the hardware stores there, but the one that is handled by Williams is not represented there, because Williams has "exclusive territory."

Next week she travels to the next town up the line and the same condition obtains there.

What other conclusion can she draw than that there must be something especially worth while about my ranges which makes hardware merchants anxious to sell them?

And keep this in mind-

The pleased customer can help you a lot to increase your sales. The bigger, therefore, the list of purchasers of my make of ranges in a given section is, the better will be the chances for the merchant who sells my ranges.

We have letters from customers of ours which tell of instances where the sale of one range resulted in as high as six more to members of the same family.

So keep on pushing for kitchen range business during the summer months.

Do not take it for granted that June and July and August are not good for kitchen range sales. They are and by a little extra effort you can make those ordinarily dull months just as profitable as April and September.

Home Town Dealer Boosts Sales of Home Town Made Stove.

HERE is another example of a home town store boosting the product of a home town factory. About a year ago, according to the advertisement of Neuman & Kettler, retail dealers at Lima, Ohio, Fred Schulenberg invented a wickless oil kitchen range. A company was organized under the name of the Vapo Stove Company to manufacture this new range and the finished product is now being advertised by one of the Lima dealers, as shown herewith.

Allowing for the enthusiasm which is only natural for the advertising man, the statements made in the announcement are of such a character that they carried enough interest to cause many Lima housewives to inspect this new kitchen range, and from information which has come to this office, a considerable number of Vapo stoves have been sold by Neuman & Kettler.

A few weeks ago, a representative of AMERICAN ARTISAN AND HARDWARE RECORD had an opportunity to examine this new range and was much impressed with the simplicity and efficiency of its operation.

While no special effort will be made this year to solicit orders except in the section of Ohio and Indiana near Lima, the management of the Vapo Stove Company states that it is planned to have everything in readiness for a vigorous selling campaign for 1923 business.

The advertisement is well written, but probably the copy was late in reaching the printer, for the proof reading was not as careful as it might have been, the paragraph referring to the material of which the range is made reading "——, made of 'Armo iron.'" Undoubtedly this should have been spelled with a "C," so that the description would read "Armco iron."

Hurrah! It Has Arrived-At Last The Wonder Range-The Lima VAPO STOVE

Lima's newest industry, patented, financed and manufactured by Lima people exclusively—the first ODORLESS, WICKLESS, SAFE, SIMPLE, ECONOMICAL OIL RANGE in the world, is ready for the first time—TODAY.

It Marks a New Day in Cooking Economy

A few years ago, Fred Schulenberg, a Lima boy, working in one of our local factories, had a dream. He could see, that in the not too far distant future, the supply of natural gas would be exhausted. Man must find for her a fuel, and, more particularly a STOVE, that was CLEAN. SAFE, SIMPLE and ECONOMICAL.

Mr Schulenberg worked many nights at home—after a hard days work at the shop—to discover a stove that would meet these requirements—a safe, simple, economical stove, independent of gas. About a year ago, he was rewarded for his hard work, by discovering the operation of PERFECT COMBUSTION in a PATENTED BURNER that would give three times as much heat, at ONE HALF the EXPENSE.

After much delay, in getting in special machines designed, the factory was started. So here is the product ready for LIMA PEOPLE. And, its the LAST WORD in an OIL RANGE. Not only in the U. S., but in the WORLD Our Washington Patent Office SAYS SO. Fred Schulenberg's dream is realized, at last.

VAPO OID RANGES have NO WICKS. Burners are guaranteed for life of store. Only ODORLESS OIL STOVE made.

Protecting Shield for Burner, no "boil-over" to clog burners. It's fool proof. Automatic locking device, no child can turn it on or off.

Hotter and faster fire than any gas hot plate, therefore quicker cooking at half the expense.

Not a tin oil stove, but a RANGE, made of Armo iron and Lima Sheet Metal.

NOW THEN, LISTEN! 28 hours of burning on a gallon of kerosene. At 4 hours each day, for cooking, means only an expense of SIXTY CENTS PER MONTH:

If your gas bill has been from \$6 to \$32 per month, you can SAVE the price of this new VAPO STOVE from 2 to 9 months.

Made in beautiful combination white and black enamel.

Sold Either for Cash or on Account.

NEUMAN & KETTLER

Newspaper Advertisement Used by Neuman & Kettler, Retailers of Lima, Ohio, in the Republican-Gazette, Announcing the Placing on the Market of the Vapo Stove, a Home Town Product.

Know All About the Sloves Which You Sell.

Knowledge is power—and it brings profit where applied. Study the stoves which you sell. The more you are able to tell the customer about the quality and service of a stove the greater is your chance of closing the sale.

Events and Progress of the Hardware Trade.

What the Retailers, Jobbers and Manufacturers Are Doing. Latest Selling Methods and Experiences of Successful Men.

Makes Special Varnish Offer to Dealers.

In practically every community served by a hardware store, there are possibilities of developing a profitable trade in paints and varnishes.

The Clean-up and Paint-up Campaign, carried on in all parts of the country, puts the public in the right frame of mind for the favorable reception of selling appeals in behalf of paints and varnishes.

There is an especially promising field for the enlargement of sales of varnishes. Therefore, the dealer will find it to his advantage to investigate the special thirty day offer made elsewhere in this issue of AMERICAN ARTISAN AND HARDWARE RECORD by the Federal Varnish Company, 2837-55 Irving Park Boulevard, Chicago, Illinois.

At the bottom of the advertisement of this Company in the present issue of AMERICAN ARTISAN AND HARDWARE RECORD is a coupon in the form of an order blank which makes it easy for the dealer to avail himself of the benefits of this special offer. taining hardware and hardware supplies from the said manufacturers thereof, and thereby unduly to hinder competition in the distribution and sale of hardware and allied commodities in interstate commerce."

The law under which the Federal Trade Commission was instituted provides that the respondents, the Southern Hardware Jobbers' Association, may appeal the case to the United States Circuit Court of Appeal, but at this time no notice of such appeal has been filed.

Enjoin Southern Hardware Jobbers from Interfering with Retail Buying Agencies.

Federal Trade Commission Holds Illegal Their Attempt to Prevent Buying Organizations from Securing Regular Wholesale Prices.

Y AN order issued during the B past week, the Federal Trade Commission holds that the Southern Hardware Jobbers' Association, a number of its constituent members, and its officers have violated the act creating the commission by using unfair methods of competition, in that they have by agreement with certain manufacturers of tools and other hardware prevented certain cooperative retail buying organizations from obtaining such articles at the same regular wholesale prices that were accredited to socalled legitimate jobbers.

The specific charge of the Federal Trade Commission is found in the following quotation from the above-mentioned order:

"That the respondents conspired and agreed among themselves and with others to induce and coerce members of the American Hardware Manufacturers' Association by means of boycott and threats to boycott, to refuse to deal with, or to sell to, in interstate commerce, the

Merchants' Cooperative Association and the American Purchasing Company upon the same terms and conditions given by the members of the said Manufacturers' Association to the respondents, and thus compelled the American Purchasing Company and the Merchants' Cooperative Association and their stockholders to purchase as retailers from their competitors, the members of the Southern Hardware Jobbers' Association, and upon the same terms and conditions given by the members of the Association to their retail customers.

"That the purpose and intent and result of all these activities on the part of the Southern Hardware Jobbers Association, its officers and members, was unduly to hinder competition in interstate commerce between the members of the respondent Jobbers' Association on the one hand, and the Purchasing Company and the Cooperative Association on the other, and unduly to hinder the two latter from ob-

Novel Device Draws Attention to Special Sale.

Next time you have a reduction sale in your store, you can bring it to the forceful attention of those who pass, by a unique stroke of advertising.

Get an old axe—one that is nicked so that it can be seen to have had much use.

Put it in your window with a large placard reading:

"This axe has had hard usage in cutting prices for this sale."

Little touches of this kind that are different will secure favorable attention.

Wants to Get Repairs for "Winner" Lawn Mower.

To American Artisan and Hardware Record:

Will you kindly advise me where I can get repairs for the "Winner" lawn mower?

Yours very truly, W. E. Briggs.

—, Illinois, May 24, 1922.

Don't take advantage of your customers by overcharging them on work. They may not say anything about it, but you'll be apt to wonder why they don't patronize you again.

Screens and Screen Enamel Can Be Sold in Bigger Volume by Applying Your Knowledge.

Study the Three Advertisements Reproduced Herewith and Observe Use of Facts of Health, Economy and Durability.

IF YOU had a dollar for every time that you have read or heard the statement, "Merchandising is a matter of service," you could afford to retire from business and spend the rest of your life in the utmost luxury.

John D. Rockefeller used the same arithmetic in building up his

ject to being put in the kindergarten class.

Everybody knows that screens are for the purpose of keeping out flies.

This is a truth almost in the same group with the truths of arithmetic.

But your profits depend upon how you use this truth, just as You can sell a limited number of screens by saying to prospective customers that screens will keep out flies and mosquitos and thus protect them from the annoyance of these pests.

You can make your selling talk stronger by showing that flies are scavangers—filthy beyond the power of words to tell.

Moreover, you can play upon the fears of the people in a perfectly legitimate way by pointing out the danger of deadly diseases the germs of which are carried by flies. This has been proved beyond all controversy.

A fly taken from the room of a typhoid fever patient was placed upon culture medium under a glass case and allowed to walk around for a few moments.

Then the culture medium was placed in an incubator and after a while removed for examination.

It was found that literally millions of typhoid fever germs were swarming over the culture medium.

The fly is one of the most harmful disease carriers.

The fly comes from a putrifying mass outdoors, carries the filth into the house, and spreads it over the food which the people eat.

Without doubt, this is a more effective selling argument in behalf of screens than merely saying, "keep out the flies and mosquitos by screening your house." So, you see, a great deal depends upon how you develop the facts at your disposal in your advertisement and selling talks.

Owing to the persistent and widespread campaign of the United States Department of Health and of the various state and city boards of health, a big percentage of the people are already convinced of the necessity of protecting themselves and their families against unclean conditions and disease-carrying flies and mosquitos.

In the South and, in fact, in all countries where there are marshes or stagnant waters, mosquitoes carry the germs of yellow fever and malaria.

The little black and yellow band-



Advertisement of Golden Hardware Company, Reproduced from the Tifton Gazette, Tifton, Georgia.

vast fortune that you use in buying and selling hardware.

No doubt, you would resent any one's using a heavy oratorical tone to convey to you the information that two and two make four.

If it were done with a great assumption of authority, you would probably become indignant and obJohn D. Rockefeller's profits depend on his use of the elementary truths of arithmetic as factors in his business.

From the simple statement that screens are for the purpose of keeping out flies, a countless number of trade developments may be evolved.

ed mosquito, called the Anopheles, carries the germ of malaria with its disagreeable chills and fevers.

Now it is certain that if you inform yourself regarding these facts and use them in a simple, straightforward manner in your advertisements and selling talks, you will get a much larger volume of sales for your screens than if you content yourself with mere statements to the effect that screens keep away the annoyance of flies and mosquitoes.

Then there is another development from the simple statement that screens help keep your house sanitary.

This is the economic side of the question. Eternal vigilance is the price of health as well as of liberty.

Therefore, screens need to be kept in good condition year after year.

The rains of spring and summer beat against them and soon wash out last year's screen enamel.

Consequently, before putting the screens away for the winter they need to be repainted.

Again, in the spring, before putting the screens up for the season, they require another painting to arrest any process of rusting that may have set in while they were in storage.

With the utmost care the ordinary screen material lasts only a few years.

Now, wire screen cloth must be used to replace the screen which has rusted to an extent which permits flies and mosquitoes to enter through the holes thus made.

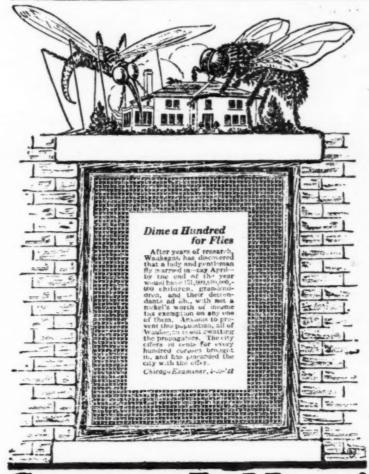
Here the dealer has another selling argument in behalf of better material.

This is an application of the truth that merchandising is a matter of service.

A considerable number of people in every community have been educated to the point where they realize that first cost must be judged by the length of service.

Consequently, they are open to the arguments in favor of more permanent screen material such as galvanized screen wire cloth. Furthermore, the work of educational propaganda inaugurated and promoted by the Copper and Brass Research Association, is a distinct help to the dealer in convincing his prospective customers of the advantages of using copper screen cloth.

In localities along the sea shore where the action of the salt air quickly breaks down the structure of the ordinary screen cloth, copper



SCREEN IT NOW!

SHUT out mosquitoes and flies. Avoid the terrible risk of typhoid and malaria infections. Screen your windows and porches NOW. Specify "PEARL" because it is sanitary—handsome—as near rust-proof as screen material can be. This is due to its metallic coating, a special process which insures long life.

Look for the copper wires in the selvage that you may be sure you are getting genuine PEARL.

Buy Gilbert and Bennet Pearl Wire and you get the best.

Shaefer Hdwe. Co.

THE WINCHESTER STORE

The Largest Selection of Hardware in Washtenaw County
23 Huron Street 124 Michigan Ave.

Advertisement of Shaefer Hardware Company, Reprinted from the Ypsilanti Press, Ypsilanti, Michigan. screens are an economic necessity.

In other localities, the advantages of copper screens lie in the permanence of this material.

It requires no replacements of any kind except in the somewhat

which appeals to the average householder in the fall of the year.

Many a man grumbles when he has to take down the screen and put them away for the winter.

Copper screens can be allowed to

Thus, for instance, the Golden Hardware Company of Tifton. Georgia, whose advertisement is herewith reproduced from the Tifton Gazette of that city, uses the very effective logic that "there is no better health insurance than a well screened home."

The illustration in this advertisement is quite graphic and conveys the force of the advertisement with a maximum degree of power.

The influence of the illustration is intensified by the admonition at the lower part of the oval, "Screen early."

The prodigious rate at which flies multiply is cleverly set forth by the Shaefer Hardware Company, in connection with their advertisement of screens which appeared in the Ypsilanti Press, Ypsilanti, Michigan.

The Shaefer Hardware Company combines the argument of protection against disease with the appeal of economy in the text of this advertisement.

With the advice, "Screen out the first flies now," Goldcamp Brothers and Company feature a nationally advertised screen enamel in their advertisement which is herewith reproduced from the Irontonian, Ironton, Ohio.

The reasons in support of the use of screen enamel are given briefly but convincingly.

Besides, Goldcamp Brothers and Company tell the readers of their advertisement how to order screens and state that they have screen wire in lengths ordinarily used in black, galvanized, and copper screen wire cloth. This advertisement is attractively made up with a good illustration and plenty of white space to supply the needed contrast which gives emphasis to the selling message.

The hardware dealer who becomes convinced of the endless possibilities of profit for his business in the application of the truth that "merchandising is a matter of service," will derive valuable suggestions from the three different advertisements reproduced on these pages.



Install your window

screen doors before the flies

All common sizes of Screen Doors in stockbring the width and measurements

In ordering our Screens windows bring measurements in widths and heights of a pane of glass in every window you want screened. We have screen wire, any width, any length ordinarily used in black, galvanized and copper screen wire cloth.

Goldcamp Bros. & Co. The Best Paint Store

Center St.

Goldcamp Hardware Bldg.

Advertisement of Screens and Screen Enamel of Goldcamp Brothers and Company, Republished from the Irontonian, Ironton, Mich.

rare instances where holes have been punched in the cloth accidentally by children at play or by some other cause.

Black and Green

Instructions on each can.

Copper screen cloth needs no painting.

It possesses another advantage

remain in place winter and summer because they are impervious to the action of the elements.

In the three advertisements reproduced herewith, you have examples of the use of some of these arguments in the selling of screens.

Suggestions and Plans for Window Displays.

Instructive Examples from Exhibits in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

WINDOW EXHIBIT WINS HONORABLE MENTION.

Here and there in the vast mass of citizens making up our republic, there are men who take no interest in baseball.

But they are so few in numbers as to be a negligible quantity.

The great majority of Americans are intensely intrigued by baseball, whether played professionally or by amateurs on town lots.

Therefore, the appeal of the baseball window display is almost universal in its effect.

Few fathers of families or elder

brothers can be found who would refuse to buy baseball supplies for themselves or for the boys of the family.

This window display, therefore, has the advantage of already established interest in the things which it shows.



Window Display of Baseball Goods Awarded Honorable Mention in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. Arranged and Designed by David A. Goodlad for the Salt Lake Hardware Company, South Main Street, Salt Lake City, Utah.

The arrangement of the goods was so attractively done that the display was judged to be worthy of honorable mention in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

This display was designed and arranged by David A. Goodlad for the Salt Lake Hardware Company, South Main Street, Salt Lake City, Utah.

In describing this window exhibit, Mr. Goodlad says that "the floor of the window was covered with white outing flannel. Three bats were placed at the four corners of the windows. Nearly every mitt and glove had a baseball in it.

"Practically everything in the baseball line was displayed in the window.

"The background feature of this display was a man seated at a desk looking over his morning mail. He comes across the sporting paper and reads that it is National Baseball Week.

"The calendar over his desk shows the dates and his mind is full of baseball.

"You will notice baseballs with wings flying in the air, also baseball bats in the lower part of the background walking toward the man at the desk. This is why we painted at the top of the background 'The baseball bug is busy.'

"Our busines was increased more than fifty per cent as a result of this display."

Don't Apologize for Prices, Explain Them.

A New York hardware man, Seymour N. Sears, believes that we apologize too much for prices instead of explaining them. He says:

"You pay a dollar and a quarter for a pound of candy, and then apologize to a man for charging him ten cents for a pound of nails. We have been accustomed to pay that much for candy and take it for granted that that is the price.

"You take the millinery tradea woman will buy a hat for, say, twenty-three dollars, and if you say anything about the price being high or the hat not being worth that

much, she will say, 'Well, you ought to see the prices of the other ones.' Perhaps the hat will get caught in the rain-it is spoiledbut the owner of it does not try to get another one in exchange.

"In the making of a file, the steel for the manufacture of it goes through thirty-six operations before it reaches the yard of the file manufacturer, these operations being performed by only the most skilled mechanics. Then there are many more operations necessary in the manufacture of that file.

"If a hat is worth twenty-three dollars, why is it that the file, which only skilled mechanics can make, is only ten cents-with a handle?

"In the past, the hardware men have thought that competition was the life of trade. Cooperation is the life of trade.

"Hardware men have told me that it was not possible to sell a hammer for more than sixty cents, and the war came and hammers went to a dollar and a quarter. It has gone up in proportion to what other things have, and is worth it.

"My point is that we ought to get some more money out of the hardware business. The hardware men should have the same dignity as the lawyers, the linen men, etc. My thought is that the hardware man ought to get a price for his goods.

"I believe if the hardware men would check half their goods, and marked these goods before they saw a bill, they would make some money. We have been so afraid of hurting somebody's feelings that we have not gone out to get a profit on our goods."

Coming Conventions

Society of Heating and Ventilating Engineers, Semi-Annual Meeting, June 5, 6, and 7, 1922, Hotel Iroquois, Buffalo, New York, and June 8, 9, and 10, 1922, Hotel Wolverine, De-troit, Michigan, C. W. Obert, Secretary. 29 West Thirty-ninth Street, New York City.
Metal Branch National Hardware As-

sociation, Hotel Statler, Cleveland, Ohio, June 9 and 10, 1922. W. H. Donlevy, Chairman, 1012-14 Cherry Street, Philadelphia, Pennsylvania.

Associated Advertising Clubs of the

World, Milwaukee, Wisconsin, June 11,

12, 13, 14 and 15, 1922. Carl Hunt, Secretary, 110 West 40th Street, New York

City.

National Retail Hardware Association, Chicago, Illinois, June 19, 20, 21, 22 and 23, 1922. Headquarters, Hotel Sherman. Herbert P. Sheets, Secretary-Treasurer, Argos, Indiana.

Master Sheet Metal Contractors' Association of Ohio, Zanesville, Ohio, July 18 and 19, 1922. W. J. Kaiser, Secretary, 123 East Chestnut Street, Columbus, Ohio.

Annual Outing of Michigan Sheet

Outing of Michigan Sheet Annual Metal and Roofing Contractors' Association, July 25, 26 and 27, to Grand Rapids, Chicago and Milwaukee. Frank E. Ederle, secretary, 1121 Franklin street, Southeast, Grand Rapids, Michigan. Sheet Metal Contractors' Association

of Pennsylvania, Hotel Lawrence, Erie, Pennsylvania, July 27 and 28, 1922. W. F. Angermyer, secretary, 714 Home-wood Avenue, Pittsburgh, Pennsylvania.

Retail Hardware Doings

Illinois.

E. R. Dunnagan, who has been manager of the hardware store of J. D. Gillespie and Company, of Downers Grove, has purchased the store from the The firm name will be changed owners. to The Downers Grove Hardware Com-

A new hardware store has been opened by the Ogden Hardware Company on Ogden and Forest avenues, Brookfield, John Bozata is the proprietor.

A. J. Vander Vennet, at one time in the hardware business at Moline, has purchased the hardware stock of Hem-mingson Brothers Hardware Store at 1417 Sixth avenue, Moline.

Alva Wright will open a hardware store in the Hunt Building, Ramsey, as soon as the vacant storeroom is remodeled.

Iowa.

E. W. Holbrook has sold his hardware store at Charles City to the Shuir-man Hardware Company of Keewatin, Minnesota, and will operate another store at that place. Mr. Joseph Shuirman will be in charge of the store at Mason City.

The hardware store of J. H. Clark & Son, of Farragut, has been damaged by fire.

The E. J. Riegel Hardware Store of Inwood, has been sold to J. W. West. C. F. Gardner has purchased the Fred Welp Hardware Store in Blairsburg.

Michigan.

The Eray Hardware Company of Saginaw has been incorporated with an authorized capital stock of \$12,000. . . . The Wilcox Hardware Company of

Adrian has been damaged by fire. loss is estimated at \$15,000.

James Smith has sold his interest in the hardware stock of Smith and Smith at Birch Run, to Ola Thompson. The business will be continued under the name of Smith and Thompson.

Minnesota.

Decker Brothers Hardware Store, of Austin. will open a branch store at Lans-They have purchased the R. J. Chaffee hardware store at that place. E. R. Hacmac is the manager of the new store.

Missouri.

August Berghofer has purchased the hardware stock of the Bier Hardware Company at Palmyra.

Study and Interpretation of Advertisements.

You Can Make Your Advertisements More Gainful by Avoiding the Faults and Profiting by the Good Qualities of Others.

At several of the hardware conventions this year when the topic of automobile accessories was under consideration through the Question Box, dealers spoke of the profits to be made from the sale of tires, provided they were properly advertised.

Here is an advertisement of tires in which price is the magnet.

It appeared in the Racine Call, Racine, Wisconsin.

The reason given by the Hoernel Hardware Company for being able to offer big values at small prices is that the Company is a "direct factory dealer."

The advertisement is typographically well proportioned and has



relatively just the right kind of emphasis.

Although the brand of tires mentioned in the advertisement is not as widely known as are others which are naturally advertised, yet it has the advantage of at least being easy to identify.

It is reasonable to suppose that Hoernel Hardware Company, being well established in business and holding the good will of numerous customers, would not lend its name to a make of tires which fails to give satisfaction.

A good-natured pun puts the average person in pleasant humor.

That is the reason why most readers would receive an agreeable impression from the advertisement of Williams-Counsell Hardware



Company, which is reproduced herewith from the Waukesha Freeman, Waukesha, Wisconsin.

The pun appears in the part of the advertisement featuring hoes. But it is not the kind of hose for display.

Women as well as men can use garden hoes to the advantage of their health.

This advertisement merits approval because of its conspicuous quotation of prices.

Opinion is sharply divided among advertising experts as to the value of retail publicity in which no intimation of prices is given.

An example of this kind of publicity is shown herewith in the ad-



vertisement of Wright Brothers Hardware Company, which appeared in the *Vicksburg Post*, Vicksburg, Mississippi. This advertisement is a general statement of the firm's willingness to figure closely on hardware, paint, and varnish for new dwellings.

No particular brands of commodities are mentioned nor any prices stated.

In general text of this character, of course, it is not practical to go into details.

The purpose of the advertisement is to prepare the way, no doubt, for more specific advertising messages to follow.

The offer to help the fisherman select the right outfit is a genuine proffer of service sure to be appre-



ciated by a big majority of prospective customers.

This is a commendable feature of the advertisement of Buckeye Hardware Company, reproduced herewith from the *Findlay Republican*, Findlay, Ohio.

However, the advertisement could be strengthened by mention of one or two things generally used by the fisherman and the price or range of prices could be stated for the purpose of giving a more definite idea of what the customers may expect from the Buckeye Hardware Company.

Watch every detail of your business, and guard your purchases and sales ever so closely so that you don't go beyond your depth.

Facts of Warm Air Heating and Ventilating.

Reports of Progress in Warm Air Heater Research Work. Ventilating Factories, Theatres and Other Buildings.

Gives Out Program of Heating Engineers' Convention.

Stating that the meeting will be of more than ordinary importance, C. W. Obert, secretary American Society of Heating and Ventilating Engineers, has issued the following tentative program for the semi-annual convention of the organization, which is to be held June 6 and 7 in Buffalo, New York, and June 8, 9, and 10, in Detroit, Michigan:

Buffalo, New York.

FIRST SESSION. Tuesday, June 6, 10 a. m.

BUSINESS SESSION.

Address of Welcome.

Response by President Jay R. McColl. Annual Reports of Chapters.

Committee on Code for Report of Testing Fans.

Report of Committee on Installation of Furnaces.

Report of Committee on Guide Pub-

Paper: Relation of Architect and Engineer, by E. T. Bradley.

SECOND SESSION.

Tuesday, June 6, 2 p. m. PROFESSIONAL SESSION.

Paper: Comparative Tests of Automatic Ventilators, by J. P. Calderwood, A. J. Mack, C. J. Bradley. Paper: Water Pipe Sizes for Plumbing Fixtures, by W. S. Timmis.

Paper: Corrosion in Water Carrying Vessels, by J. E. McDermot.

THIRD SESSION.

Wednesday, June 7, 10 a.m. RESEARCH SESSION.

Report of Committee on Research. Papers on Results of Investigations at Research Laboratory.
Paper: Dustiness of Air in Granite

Paper: Cutting Plant, by S. H. Katz, L. J.

Detroit, Michigan.

FOURTH SESSION. Thursday, June 8, 10 a. m.

SCHOOL VENTILATION SESSION.

Paper: Detroit Public Schools, by H. Anderson.

Paper: Ventilation Fundament Where Does the Society Stand, by Dr.

FIFTH SESSION.

Friday, June 9, 10 a. m.

PIPE SIZE SESSION.

Report of Committee on Pipe Sizes. Pipe Size Data from the Guide. Paper: Critical Velocity in One-Pipe Steam System, by F. E. Gieseke.

Paper: Dry Returns, by R. V. Frost. Paper: Temperature Control by Fractional Distribution of Steam, by J. A. Donnelly.

SIXTH SESSION.

Saturday, June 10, 10 a. m. PROFESSIONAL SESSION.

Paper: Recent Developments in Furnace Heating, by F. R. Still.

Paper: Air Conditioning for Sausage

Plants, by M. G. Harbula.
Paper: Engineering Co Conditions in

China, by H. L. Alt.

Estimates Warm Air Heater Efficiency by the Coal Value and Consumption per Hour.

Here Is Concluding Part of Address by V. H. Parks at Meeting of the Western Warm Air Furnace and Supply Association.

HE question of furnace ratings is one that must receive both serious and sane consideration by furnace manufacturers, if we are to build up our business to the plane to which it is entitled.

The technicalities involved seem to me to be of the most simple nature; and the calculations equally plain which are necessary to establish a rating that is high enough to satisfy the most optimistic manufacturer, and at the same time come not only within the bounds of rea-

son, but also bear the most critical analysis of heating engineers who are qualified, both by experience and research work which they have conducted, to pass on this matter.

I again remind you that we are referring to the best authorities we can find for the few factors we need as a basis from which to work, in order to establish what we call an approximate standard per square foot of grate surface, for a furnace burning a good grade of bituminous coal.

I am not going to slander Mr. McHenry's rule, but I am going to take a slightly simpler way to measuring or establishing the size of the grate surface.

A great many, or at least some, very well informed men say you can not do beter than take the average diameter of the fire pot in the case of a common round tapering pot furnace.

That is, if the top of the pot is 22 inches inside diameter, and the bottom is 18 inches, which is the case in a very large number of average furnaces, we would then have a grate diameter from which to work of 20 inches.

As a great many furnaces do not quite measure up to the full catalog size, let us reduce this, so as to be conservative, to 191/2 inches which would give an area of 299 square inches, or 2.08 square feet of grate surface on which to base our calculations of the efficiency of a common 22 inch pot furnace.

The coal value and consumption per hour, which I will use, should not create any adverse criticism, as it has been, and is every day used as a very approximate average.

The coal used by Professor Willard is given as having an analyzed value of 12,791 British thermal units per pound, and a very slight study of coal values as given in the book entitled "Steam-Its Generation and Use," compiled by Babcock and Wilcox Company, of New York, 35th edition, 2nd issue, table number 38, pages 177-188 inclusive, will convince nearly any one that a coal valuation of 12,800 British thermal units is neither low, nor in any way above, the average.

It is hardly necessary to look up or quote authorities for the statement that 41/2 pounds of coal can be very well consumed and burned to ashes on one square foot of grate surface per hour.

Now, gentlemen, comes the point for discussion.

Suppose, for our present needs, we repeat that some pessimist claims a hot air furnace wastes 60 per cent of the heat, or is only 40 per cent efficient. I recently talked with a man who makes a very fine heavy cast furnace, and utilitizes a form of tubular horizontal radiator to aid in making a long fire travel.

This man installs a number of his heaters in schools, and is a diligent and respected engineer, and is in a position to, and does, conduct experimental tests on jobs he has installed. Also, he is a gentleman of at least average integrity, and is much more inclined to talk shop and technical matters than he is boast about his furnace and sales. This man's statement is, that under actual test they proved an over all efficiency of more than 70 per cent.

In view of the two undoubtedly extreme claims, and also considering the facts as we have them from the University of Illinois in which the tests ran from 54 per cent to 59 per cent, and in which it seems that every possible means was adopted to arrive at correct data, I am going to assume the over all efficiency of a warm air furnace, properly installed and operated under very average conditions, will deliver or transmit to the air in the casing, such an amount of heat that 55 per cent of the heat units contained in the coal, after having made allowance for heat loss from the casing and hood and pipes, will be delivered into the rooms to be heated.

I feel that in taking this over all efficiency of 55 per cent that unless the furnace has in excess of 27 square feet of radiation per square foot of grate surface, and is installed in a heated basement and the pipes and casing unusually well insulated, that we are getting pretty close to the average.

I will therefore base my calculations on the following factors:
Coal value, 12,800 heat units per pound.

Grate surface, 2.08 square feet. Rate of combustion, pounds per square foot, 41/2.

Over all efficiency of furnace, 55 per cent.

Outside temperature, 20° below zero.

Inside temperature, 70° Fahrenheit.Register temperature, 185° Fahrenheit.

Return air temperature, 65° Fahrenheit.

Difference in outside and inside temperature, 90° Fahrenheit.

Temperature rise in furnace, 120° Fahrenheit.

Velocity of air in basement pipes, 170 feet per minute.

I heat unit raising the temperature of 55 cubic feet of air I degree. The following calculations are easily followed, and purely mathematical, and self explanatory.

 $12,800 \times 55\% \times 4\frac{1}{2}$ lbs. \times 2.08 square feet = 65,894 heat units developed by coal burned per hour. $65,894 \times 55$ 3,624,170

= = = 30,20

cubic feet of air raised 120 degrees by 2.08 square feet of grate surface per hour, and is the amount or number of cubic feet of air we will have to take up stairs every hour. $170 \times 12 \times 60$ 122,400

= 70.83

1728

cubic feet of air delivered per hour
by one square inch of pipe area.
30,201 - 70.83 = 427 square inches
of pipe area required to deliver
30,201 cubic feet of air per hour,
and is the square inches of pipe
area that 2.08 square feet of grate
surface will supply at the factors
stated above.

Further:

 $65,894 \div 427 = 155$ heat units delivered per hour by one square inch of pipe area.

Further:

 $427 \div 299 = 1.4$ square inches of pipe area supplied by one square inch of grate surface.

(To Be Continued)

Shows Appreciation of Salesman's Efforts.

The money that you get for your work is not all of your wages by a long shot.

Indeed, the real wages for effort is something far more gratifying than dollars and cents.

Shakespeare phrases it: "Our praises are our wages."

A manufacturer who pays both kinds of wages always has the most loyal and productive staff of salesmen.

The biggest results in volume, value, and friendships come from a generous wage of praise—where praise is earned.

Conspicuous among the manu-



L. G. Colburn.

facturers who realize this truth and practice it is the Meyer Furnace Company, Peoria, Illinois.

In a recent statement, the Meyer Furnace Company declared that to no little extent the credit for the gratifying business which the Company has enjoyed is due to the intensive and untiring effort of L. G. Colburn, supervisor of sales of the "Warm Home" Cast Furnace and Sectional Casing Pipeless, made by the Meyer Furnace Company.

Mr. Colburn knows every quality to the smallest detail of the Meyer products, whose sales he supervises.

He is able to make friends with the trade because he is thoroughly convinced that in selling the Meyer Furnace Company's "Warm Home" Cast Furnaces and Sectional Casing Pipeless, he is enabling the dealer to make an honest profit and give genuine service to the customer.

Makes Effective Display at Own Your Home Exposition.

The revival of building in all parts of the country together with the desire to escape the drain of high rentals upon income have operated strongly in creating uncommon interest in the various Own Your Home expositions, which are being conducted in the leading cities.

These expositions afford oppor-

Peoria, Illinois, featured in the Hermann Brothers display, is shown to very good advantage. One-half the casing was cut away so that visitors could inspect the structure of the furnace.

Hermann Brothers manifested sound judgment in featuring standardized goods in this display such as gutters and down spouts made of Armco Iron, Rock Island registers, Marsh Lumber Company's wood faces, and the like.



Exhibit of Warm Air Heater Dealer at Own Your Home Exposition in Indianapolis, Indiana.

tunity for effective display of household conveniences and equipment.

Naturally, it is much easier to sell commodities to people who are already interested in them.

The men and women who take the trouble to visit the Own Your Home exposition are, for the most part, seriously considering the advisability of buying or building homes.

Therefore, they are likely to be strongly influenced by a display of warm air heaters and accessories such as that of Hermann Brothers which was shown at the recent Own Your Home Exposition at Indianapolis, Indiana.

During this exposition, a contest garage was being constructed and Hermann Brothers had the contract for the tin work on that garage.

The "Warm Home" heater made by the Meyer Furnace Company, According to its established policy of cooperating with its dealers in every practical way, the Meyer Furnace Company, Peoria, Illinois, had one of its clever salesmen, M. J. Oliphant, in charge of the demonstrations of the "Warm Home" Heater for the Hermann Brothers exhibit.

Experience has amply proved the benefits derivable from displays of this kind by the enterprising warm air heater dealers and installers.

New Cast Warm Air Furnace Made by Orbon Stove Company.

The Orbon warm air furnace which is manufactured by the Orbon Stove Company, Belleville, Illinois, is said by the makers to be a high-class cast furnace at an unusually low price. It is, as will be noted from the accompanying illus-

tration, of the horseshoe radiator type.

Both fire pot and combustion chamber are heavily corrugated, thus presenting additional heating



The New Orbon Furnace.

surface, but the firepot is smooth and straight inside in order to prevent ashes and clinkers from sticking to the sides and thereby cutting down the efficiency of the furnace.

An extra large water pan is provided.

Preparations are being made to start a heavy advertising campaign to consumers for the benefit of those who decide to take on the Orbon line of furnaces for the coming fall and winter.

Joins the Sales Staff of Utica Heater Company.

Announcement is made that S. F. Gottschalk, formerly of the Monitor Stove Company, has joined the sales staff of the Utica Heater Company, Utica, New York.

He has been assigned to the territory embracing the states of Indiana and Michigan.

His accurate and practical knowledge of warm air heaters, coupled with his pleasing personality and helpful saelsmanship, warrant the prediction that he will be successful in his new connection.

Opportunities are pretty sure to come to every man. At the same time it's not a bad idea to look around and send out a few invitations!

Practical Helps and Patterns for the Tinsmith.

Aids to the Improvement of Craftsmanship and Business. News from Various Branches of the Sheet Metal Trade.

PATTERNS FOR GABLE WITH SCROLL ATTACHED.

By O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

Sometimes buildings are finished with a gable effect with short runs of horizontal moulding and these finished in a scroll as in the sketch of this drawing.

This will be much the same as the coping ending in a scroll we considered some time ago.

So here we first draw a detail of the moulding to be used, as shown by the shaded section.

Divide this detail so the curves are in equal spaces, number each point and bend, and then project lines both ways.

Draw the pitch line E-D and bisect the angle and establish the miter E-B. After which extend the elevation lines until they meet as center line of gable. This center line can be moved downward to enable convenient development. Space in the shop does not permit making extended spaces between miter cuts, and so the miters must be crowded together in order to find space to develop them. Then on the other end as at A-F detail the scroll, which acts as a finish to the moulding. Now as the miter B-E is an equal bisection of the 2 angles, the same girth can be used for the gable or the horizontal mould.

So pick the girth from the section and set as in pattern "A" and also in pattern "B." Draw stretchout lines so they are parallel with the run of your elevation and then from each miter line project lines so they will be square to the run of elevation until they intersect stretchout lines of similar number. Join these new intersections with lines and you have the pattern finished. The spiral is already a pattern only in the spiral line a-b a tapering strip as at "M" is planted so as to set out the spiral. Otherwise this is all there is to the above development.

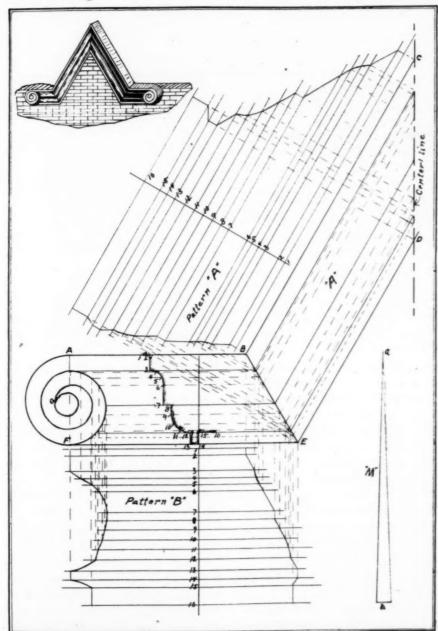
Laps must be allowed for seaming and riveting the miter joints.

Book Shows Advantages of Brass and Copper in Home Building.

How to Build a Better Home is the title of a book on building issued for free distribution by the Copper and Brass Research Association of 25 Broadway, New York City. The book is attractively illustrated and contains information of value to every prospective home

Each phase of the home is dealt with in a most thorough manner. It offers various suggestions as well as answers many questions that confront the home builder.

A chapter is devoted-to the roofing problem. Illustrations show



Patterns for Gable With Scroll Attached.

various types and the proper manner to apply the material.

One of the striking features in this chapter is a picture of a copper downspout that has been in use for 76 years and is in a perfect state of preservation.

Another picture shows a costly junk pile of discarded galvanized iron downspouts that had only been in use a few years when the weather brought them to ruin.

Another interesting chapter pertains to plumbing; one to hardware fixtures; one to heating, and another to decorations, etc.

The contention is made that the everlasting metals—copper, brass and bronze—would be universally used if it were not for their slightly higher cost. The book then concludes: But do you realize that

• For 2 and 8,100ths cents more on

the dollar you can have an everlasting copper roof;

For 3½ mills more on the dollar you can have everlasting brass in your plumbing;

For 7-10ths of a mill more on the dollar you can avoid perpetual leaks and renewals by using copper in leaders and gutters, flashings, valleys, etc.

For ½ of a mill more on the dollar you can have permanently attractive, everlasting copper, brass or bronze hardware.

The Association maintains a building service department which answers, free, inquiries on brass pipe and pipe fittings in plumbing; copper in roofs, leaders, gutters, etc.; copper, brass or bronze in building hardware and fixtures. In other words, the department serves the man who builds.

Model Sheet Metal Shop Was Outstanding Feature of Great Indianapolis Exhibit.

Modern Machinery Was Shown in Operation and Actual Work Carried on from Layout to Completed Job.

T is human instinct for those of I us who are mechanically inclined to love good tools and to appreciate machinery and good tools and machines well exhibited never fail to attract the attention of the mechanic. Shop is also a subject of interest and one that the student, apprentice and master mechanic finds pleasure in reviewing with his fellow workmen. And it usually is the case that where enthusiasm prevails in shop topics a large share of the conversation is devoted to equipment. Men who are mechanics can well enjoy the pleasure of becoming mixed up with the tools and machines of their craft and review experiences and will not hesitate to appreciate the things as used in their craft and which are helpful in the success of their business. That this is true was easily demonstrated by the fact of the large number of visitors to the Model Sheet Metal-Shop, so well staged as the big feature and the center of attraction among over one hundred other ex-

hibits at the recent Indianapolis convention of the National Sheet Metal Contractors' Association.

The honor for arranging and equipping this Model Shop fell with The Peck, Stow & Wilcox Company, Southington, Connecticut, and because the demands as made were big calling for a great deal of time, practical thought and great expenditure, this big company unflinchingly and with a wholesome spirit of cooperation undertook the task presented to them and carried it out with a high pitch of enthusiasm. Aside from tool rests and tool cabinets, clothes lockers, catalogue case, shop benches, sheet iron rack, bar iron rack, desks, etc., one solid car load of machines and tools made up the equipment which required a floor space of 44x80 feet to comfortably receive it.

L. Broemel, Sales Engineer of The Peck, Stow & Wilcox Company, as a writer and salesman, well known to the sheet metal contractor, and W. O. Seifert, western representative and road assistant to Mr. Broemel, were in charge of the exhibit. It is worthy of note and of a record breaking feat that these two men with the assistance of two laborers started moving into the space alloted them at five o'clock on the morning of Monday, May 15th, and that on the same day at six p. m. all equipment, tools, machines and other paraphernalia were in their designated places.

On Tuesday morning Mr. Broemel, acting as shop superintendent, engaged as shop foreman M. P. Schaeffer, sheet metal instructor of the Arsenal Technical School of Indianapolis. In order to provide sheet metal workers to carry out the scheme of an operating shop previous to the convention Mr. Schaeffer gave a test to his sheet metal working class and the four students who successfully passed this test were engaged to work in this shop while the convention was in progress. The sheet metal contractors of Jackson, Michigan, to represent the schools of that city provided Elton Heglund of the West Intermediate School and Basil Melville of the East Intermediate School of Jackson. Like the boys from Arsenal Technical School, their superior workmanship won this opportunity in competition with the other boys of the sheet metal classes, and they greatly enjoyed their experience as practical workers for this convention model shop. Albert Hartman, who operates 'a sheet metal shop at 715 Washington avenue, Terre Haute, Indiana, provided his youngest apprentice, Virgil Garrett, and August Hartman, sheet metal contractor of 725 Wabash avenue, Terre Haute, sent Fred Willy, a young apprentice, to further carry out the scheme of an operating shop intended to employ all student labor.

On Tuesday morning these boys reported for work and their jobs were laid out for them. They were instructed to file their demands for materials which they immediately did with their foreman when the superintendent, telephoned the supply order of wire, rivets, sheet iron, gasolene, fire pots, etc., to Tanner & Company and Follansbee Brothers' Company of Indianapolis. Motor trucks immediately delivered these supplies, when the shop became real active and greatly instructive as a view of this shop offered in the accompanying illustration shows.

It might be said that the directors and the stock holders of this big shop were represented by the sheet metal contractors who held their when a quantity of funnels, tin cups, scoops and cooky cutters were completed and carried away as souvenirs by the shop visitors.

A very interesting auto radiator repairing demonstration was given by the Tyree Auto Radiator Manufacturing Company, Chicago, Illinois, and as a test water tank is an essential equipment in auto radiator repairing an order for a test tank to be made of Number 20 gauge iron was offered the shop.

iron was cut in four sections on a new "Pexto" combination slitting shear and angle iron cutter, and the sections when fitted to the tank after riveting was welded at the corners with the use of an oxy-welding outfit furnished by the Indiana Oxygen Company, Indianapolis. The seams were soaked with "Speco" soldering flux and the soldering irons were cleaned and tinned the up-to-date way with "Speco" solid sal ammoniac, five to one, which



View of Model Sheet Shop at the Annual Convention of the National Association of Sheet Metal Contractors, Held in Indianapolis, May 15th to 19th. Arranged by L. Broemel, of the Peck, Stow & Wilcox Company, Southington, Connecticut.

meetings directly in the rear of the shop. A live sheet metal shop is not alive unless it is noisy. This shop was, indeed, too active, so much that it disturbed the meetings, forcing shop work to be suspended and as a result production was considerably curtailed. Production is the dominating factor in shop work generally; therefore, the sheet metal contractors voted that they would take to the cellar, holding their meetings there and placing this shop on a paying basis. On Thursday the shop was again in full swing

The students were instructed to lay out a tank four feet square and 18 inches deep, the top edge to be reinforced with ½xIXI inch angle iron. The construction of this tank demonstrated the new "Pexto" eight foot brake and a 36-inch grooving machine, offering a very fine heavy soldering job effected by an "Everhot" self-heating soldering iron, loaned by the Everhot Manufacturing Company, Maywood, Illinois. The angle iron was drilled with a portable electric drill of the Black & Decker make. The angle

are products of the Special Chemicals Company, Highland Park, Illinois.

Another attractive exhibit consisted of over ninety sheet metal models loaned by the School of Applied Industries, Carnegie Institute of Technology, Pittsburgh, and James S. Daugherty, Instructor, for the first time introduced in connection with this exhibit his new book published by the Manual Arts Press at Peoria, Illinois, entitled "Sheet Metal Pattern Drafting and Shop Problems." The proper develop-

ment of all models on exhibition are fully covered in this new book by Mr. Daughtery.

Another unique exhibit was offered by H. M. Dexter, Instructor of Arts and Crafts in Sheet Metal of the Strong Junior High School, Grand Rapids, Michigan. This exhibit was confined to art craft problems. The pieces exhibited were of brass, bronze, copper and sterling silver representing very fine work turned out by students of the above school in hammered hand work.

Visitors to this shop commented upon the arrangement, the tools and machines exhibited, not a few of which were new models recently brought to a successful completion by The Peck, Stow & Wilcox Company, but not as yet offered to the trade, as the most practical, complete and attractive shop that they ever had the pleasure to witness. Many of these visitors gave as their biggest reason for attending the convention the publicity that was given this feature.

To have brought sheet metal contractors a great many miles to voice the highest commendation for the order of things and interest that this model working shop offered, bespeaks great praise for the Jobbers' and Salesmen's Auxiliary to the Indiana Sheet Metal Contractors' Association for promoting the idea.

The untiring efforts of L. Broemel and W. O. Seifert are also to be commended. And not least Mr. Schaeffer, Instructor in Sheet Metal Work of the Arsenal Technical School, and the boys from that school as well as the Jackson, Michigan, and Terre Haute, Indiana, boys have demonstrated to the satisfaction of the sheet metal contractors by their laying out of sheet metal patterns, the cutting of such patterns and with hand and machine operations perfecting things of sheet metal good enough to have been carried away as souvenirs, that the future success of the sheet metal industry lies safely in the hands of this young generation.

It can only be added that sheet metal working as a vocational subject has passed the experimental stage and is one that is being practiced with good results by a great many schools, and that the subject is one that can be mastered by boys in their teens, as was demonstrated in this, the first Model Sheet Metal shop ever featured in connection with a National Sheet Metal Contractors' Convention.

Michigan Trade-marked Sheets Are Now on the Market.

According to advices from Frank E. Ederle, secretary Michigan Sheet Metal and Roofing Contractors' Association, who made a trip to the American Rolling Mill Company's Ashland, Kentucky, plant to watch the rolling of Michigan Standard Sheets, this new line of sheet metal is now on the market.

He reports that the grade of material going into these sheets will more than meet the requirements



Trade-Mark Adopted by Michigan Sheet Metal and Roofing Contractors' Association.

of the contract under which this mill is producing them.

The trade-mark which this line of products will bear is shown in the accompanying illustration. It is the trade-mark adopted by the Michigan Sheet Metal and Roofing Contractors' Association.

Shipments are now being made to Smith-Winchester Company of Jackson, Edwards and Chamberlin Hardware Company of Kalamazoo, W. J. Burton Company of Detroit, and the W. C. Hopson Company of Grand Rapids, authorized distributors of Michigan Standard Products. In a very short time these jobbers will have a complete line of Pipe, Trough and Sheets bearing the Michigan trade-mark.

Iowa Sheet Metal Contractors Will Issue Monthly Bulletin.

The Iowa Sheet Metal Contractors' Association has issued its first monthly bulletin and one will be sent out every month, for the purpose of keeping the membership informed as to matters of special interest.

From the May bulletin we note that the following wage scales for 1922 have been adopted in four cities, the 1921 scale appearing in parenthesis:

Marshalltown, 75 cents (75).

Waterloo, 70 cents (80).

Cedar Rapids, 80 cents (87½). Mason City, 80 cents (80).

The following firms have been added to the membership list since April:

J. F. Stevens, Decorah.

Centerville Sheet Metal Works, Centerville.

Klauer Manufacturing Company, Dubuque.

Kruggel Hardware Company, Rockwell.

Cahill Sheet Metal Works, Sioux City.

Ilten & Taege, Incorporated, Cedar Rapids.

L. E. Glaza Company, Waterloo.

May Take Steps to Prevent Fraudulent Brass Products.

The Copper & Brass Research Association, 25 Broadway, New York City, has discovered that scores of imitation copper, brass and bronze articles are flooding the country.

During the past week they received two clips. The steel clip retailed at 23 cents per thousand while the supposed brass clip, a patented article, sold for \$1.10 per thousand.

The supposed brass clip was tested in their laboratories and it was found to be a steel product with a brass wash covering.

The association may take steps to prevent goods that are imitations or of very low content of the everlasting metals, being so labeled or advertised as brass, copper or bronze articles.

The Titubation from an Altitudinous Site Fractured the Parietal Osseous Structure of Jack's Cranium.

In Other Words, Jack Fell Down and Broke His Crown. Greenberg Had to Tell the Story in Highbrow Words to Convince His Friend.

Written Especially for American Artisan and Hardware Record by J. C. Greenberg, Cleveland, Ohio.

JACK SMART has one of the finest sheet metal shops in town, and when I entered his place, he was busy talking furnace to a newly married couple who had just decided to put in a warm air heating system.

Of course, I was glad that Jack had a customer, so I kept at a respectful distance while he was explaining the advantages of his furnace.

Jack was surely busy with them. I listened to his sales talk, and I doubt if a college professor could have delivered better arguments in favor of the furnace.

Jack knows the technique of warm air to a frazzle and he certainly was handing this couple a fine line of technical talk.

He explained in a fancy manner the theory of B. T. Us, and cross sections of warm pipe, and cubic feet of air space.

He explained to them all about location and exposure—in fact, he told them "all" about it.

This newly married couple listened and tried to guess what all that talk meant and I guess they are still guessing.

Then when Jack had finished, Mr. Newlywed let this slip:

"Mr. Smart, we will look around a little and see what other furnaces are on the market. I imagine that your furnace is all right, but I do not believe I will be able to run it. We will see you again in a week or so. Good day."

As far as I could see, they may as well have said, "Good night," for Jack will never see them again.

Jack was nettled at this Newlywed finish, because he had it all figured out that he had sold a furnace.

"Can you beat it?" Jack said warmly. "What is the use in trying

to sell dumbells like that the best furnace in town? The more a man knows about his business the harder he falls. Here I have wasted an hour trying to sell them a good furnace, and then they turn me down fat. They do not know a good furnace from a barrel of potatoes."

I felt sorry for Jack, and I felt sorry for the Newlyweds. Both of them lost a good opportunity. Finally I said to Jack:

"Jack, this turndown is all your own fault. You have simply ruined a fine chance for a sale on which you would have made a good profit."

"Where do you get this 'my fault' stuff? I know more about that furnace than any man in this town. How is it my fault?" Jack asked hotly.

"Now, Jack," I said easily, "just sit down and let me tell you some good things for your benefit. Let me explain why you lost this sale. I heard nearly all you said, and I want to put you right."

"All right," Jack said under protest. "Shoot your wad. If you can prove me wrong I'll buy the dinner for both of us."

"Agreed!" I exclaimed with enthusiasm. "In the first place, all that sales talk you handed them was too doggone technical. They did not understand you well enough to buy. You were too 'smart' and they could not follow you clearly."

"Too technical was I?" Jack answered. "I guess that advertising man in the Furnace factory is crazy. I memorized all this matter and I know it by heart. Step by step I demonstrated the furnace according to Hoyle and if that is not salesmanship, then I am crazy. That is how they sold me the same furnace."

"Jack, you are all wrong," I ex-

plained. "The advertising matter you get is for you to read. It is your business to explain that advertising matter to the customer in a simple manner. You must be so simple that even a dumbell could understand you. Do you suppose that these Newlyweds took a special correspondence course in B. T. Us, and warm air installation?"

"I must be simple, must I?" Jack began excitedly. "Simple, indeed! I used good English, and told them about the furnace in the right kind of language. I should have spoken French or something, I guess."

"No, not French, Jack," I said, "but plain, every-day, simple English. The best sales are made by using simple words."

"Good Lord!" Jack exclaimed disgustedly. "What do you mean by simple English? What could I have said more simple than I did?"

"Jack," I said in easy tones, "I want to make you understand just what I mean, but in order to do this, I want to tell you a story which will explain this to your heart's content. Are you ready to listen?"

"Sure I am," Jack answered. "I am listening right now. Hop to

This is the story I told Jack:

"Two beautiful specimens of human innocence and happiness, in that wonderfully harmonious period of life known as juvenescence, were directed on a certain occasion to ascend a locality of no mean prominence, and there to obtain, in a vessel suitable for the purpose, a certain aqueous fluid.

"It seems, according to all traditions, that the specimen claiming the sterner male sex, having fulfilled his mission, met an obstruction and was projected downward very rapidly, and sustained a fractured cranium. His female companion also met the aforementioned obstruction, and shared the same fate—that is, she was also projected downward in a heterogeneous mass."

That was all of the story. After I had finished, I asked Jack what the story was about.

"What is the story about?" Jack repeated in a dumbfounded way, "What was that story about? I do not believe you know yourself. You merely slipped me a line of bunk that no one could have understood."

"Jack," I said, "I have just told you a story that every little baby three years old knows, and you know it, too. I simply told you that—

Jack and Jill went up the hill

To get a pail of water.

Jack fell down, and broke his crown And Jill came tumbling after.

"You did like blazes," Jack exclaimed. "You merely tried to string me."

"No, Jack," I said earnestly. "I really told you the story of Jack and Jill, but I used fancy technical language. You did not get it any better than the Newlyweds got your furnace sales talk. You were befuddled just as you have befuddled your customers. You were not simple enough. You really told them how smart you were, and that is all. You did not use real salesmanship at all. You merely made a high-toned noise."

"By George!" Jack said slapping his knee. "I get your drift all right. I see just what you mean. I should have talked so they could understand me easily. I was not simple enough. Some story! Some story, old friend. It is worth a thousand dollars to me. I guess I will buy the dinners, and at that I have the best of the bargain. Let's go eat."

Now, friend sheet metal man, don't get too smart in your sales talk. You must remember that you have been in business a long time, and technicalities are in your line. But please save your bread and butter by teaching your customers simple and easy understanding.

They are not furnace trained. In fact, they do not know a single thing about the business. So why expect it of them?

Tell them your sales story in their way and from their point of understanding, and you will sell every time.

Always remember this Jack and Jill story, and profit by it. See you next week.

Additional Zideck Articles Are in Preparation.

For the benefit of those who have been studying the articles on radiator repairing by E. E. Zideck of the Zideck School of Sheet Metal Trades, 407-413 East 91st Street, New York City, announcement is herewith made that additional articles on this subject are in preparation and will be pulished in forthcoming issues of American Artisan and Hardware Record.

Among the many favorable comments made upon this series of instructive articles is the statement that they are written in very simple language and give instructions so practical that the average mechanic finds no difficulty in following them.

Committee Is Busy on Michigan Outing.

The committee in charge of the Annual Outing of the Michigan Sheet Metal and Roofing Contractors' Association—consisting of Frank E. Ederle, Harry Rhodes and Thomas I. Peacock—held its regular weekly session Saturday afternoon, May 20th, in the office of the Rhodes Manufacturing Company in Grand Rapids.

Many suggestions were offered which would tend to increase the desirability of this trip but the original plan of leaving Grand Rapids on the night of July 25th, arriving in Chicago the next morning and going to Milwaukee that evening and spending Thursday, July 27th, in the latter city remained unchanged. These dates were then definitely decided upon.

Notes and Queries

Parts for "New Royal" Sewing Machine.

From A. E. Browder, Albion, Nebraska. Where can I get parts for the New Royal Sewing Machine?

Ans.—You can secure them from the manufacturers, Illinois Sewing Machine Company, Rockford, Illinois.

Patterns for Automobile Bodies.

From Ideal Tin Shop, Fort Morgan, Colorado.

Will you please inform me who makes and sells patterns for speedster bodies for automobiles.

Ans.—St. Louis Technical Institute, 4543 Clayton Avenue, St. Louis, Missouri.

Corks.

From A. E. Browder, Albion, Nebraska. Kindly inform me who makes corks that are two inches thick at the large end.

Ans.—Chicago Cork Works Company, 1243 South Wabash Avenue, and L. Mundet and Son, Incorporated, 322 North Clark Street; both of Chicago, Illinois.

Patterns for Automobile Bodies. From E. W. Wendel, Hinsdale, Illinois.

Where can I get patterns for automobile bodies?

Ans.—St. Louis Technical Institute, 4543 Clayton Avenue, St. Louis, Missouri.

Repairs for E-Z-Freezer.

From G. T. Mueller and Son, Columbus, Wisconsin.

Please advise us where we can obtain repairs for the E-Z-Freezer.

Ans.—Geller-Ward and Hasner Hardware Company, St. Louis, Missouri.

Sheets.

From S. A. Lesan, Guthrie Center, Iowa. Kindly tell me who makes sheets composed of two parts tin and one part lead, cold rolled or the fused metals only.

Ans.—John J. Crooke Company, 1649 Warren Avenue, Chicago, Illinois.

The bet you intended to make but didn't is always a safe bet.

Don't think that a bluff is a good substitute for an education.

Descriptive Index and Guide to New Patents.

Improved Devices Which May Save Labor in Your Shop or Add Another Source of Income to Your Retail Store.

1,408,361. Spike puller. Anthony M. Kurzwa, Chicago, Ill. Filed Mar. 2, 1920.

1,408,368. Spade knife. Owen Herbert Lewis, Hendrum, Minn. Filed Oct. 14, 1916.

1,408,441. Ventilator. Charles P. Caldwell, Kansas City, Mo. Filed Apr. 4, 1921.

1,408,675. Vise stand. Anthony J. Wimberg, Louisville, Ky. Filed June 11, 1921.

1,408,692. Cooking utensil. John H. Curtis, Long Beach, Calif. Filed Dec. 23, 1920.

1,408,743. Heater. William Rufus Jones, Summitville, Ind. Filed Aug. 14, 1920.

1,408,793. Combination drill and tap. John F. Anderson, Jr., and James C. Masters, Indianapolis, Ind. Filed Oct. 7, 1920.

1,408,807. Wringer. Gustave H. Jantz, Wyoming, Ohio. Filed July 31, 1919.

1,408,864. Domestic washing machine. George Collinson, Bristol, England. Filed Mar. 19, 1921.

1,408,869. Wringer for washing machines. Harold W. Eden, Alton, Ill., assignor, by mesne assignments, to Gillespie-Eden Corporation, a Corporation of Delaware. Filed Aug. 13, 1917.

1,408,958. Wrench. John H. Phipps and Henry F. Turner, Wickliffe, Ky. Filed July 23, 1921.

1,409,233. Washboard holder. Anton Pataky, Conneaut, Ohio. Filed July 28, 1921.

1,409,311. Tool handle. Robert C. Olson, Worcester, Mass. Filed Oct. 4, 1920.

1,409,387. Cover for garbage cans. Thomas V. Madigan, Red Hook, N. Y. Filed Sept. 2, 1920.

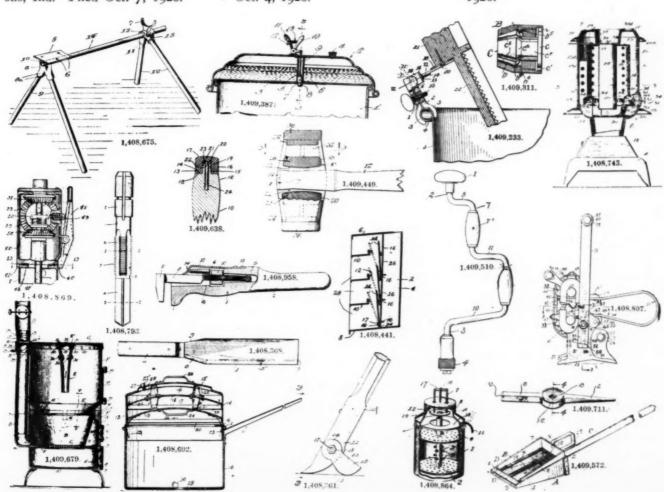
1,409,449. Hammer. Ray D. Hulslander, Chicago, Ill. Filed Apr. 27, 1921.

1,409,510. High and low speed wrench. Walter F. Adams, Los Angeles, Calif. Filed Apr. 18, 1921.

1,409,572. Combination shovel and screen. Wilbur Quinn, Battle Creek, Mich. Filed Dec. 22, 1920.

1,409,638. Chisel handle. Axel Leonard Zetterman, New Britain, Conn., assignor of one-half to Edward Nelson, New Britain, Conn. Filed Apr. 20, 1921.

1,409,679. Stove. James H. Dean, Chicago, Ill. Filed Nov. 15, 1020.



Review of Conditions in the Metal Markets.

General Situation in the Steel Industry. Report of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

PRICE OF COPPER IS GOING UP.

In continuance of the advance which started the past week, the price of copper is going up.

Few, if any, producers are willing to take orders for electrolytic at 133/4 cents delivered for prompt and May shipment.

The greater number of the domestic orders are booked at 13% cents delivered for May, June, and July shipment and for the full third quarter.

May electrolytic sales to date are estimated 60,000,000 pounds in domestic accounts and 50,000,000 pounds for export.

Copper Export Association has taken about 90 per cent of the foreign orders placed.

Active buying of drawn and rolled copper products has brought about further substantial orders for unwrought copper from wire drawers and rolling mills.

More and more interests are withdrawing from the market or jumping up their quotations.

Most, if not all, the large producers are sold up through May, June and very nearly through July.

There is a very active demand both here and abroad; actual consumption continues to run ahead of production, and the copper surplus in the country is being eaten into at a rate that is most encouraging for those who have the metal for sale.

Power transmission companies and other public utilities concerns have been actively in the market recently but buying by transportation companies has been light.

The talk of electrification of railroads is not expected to bring about any important orders for copper in the near future, but there is a larger call for both copper and brass in building enterprises.

The electrotype trade is buying

more anodes. There is also more call for sheet copper and copper bottoms.

Foreign consumers' buying of unwrought copper has been stimulated by the stronger commercial as well as the improved statistical position.

France has been especially conspicuous in the last few days, but there was more buying by Germany this week.

Electrolytic is difficult to buy under 13% cents, free aboard steamer, New York, which is equivalent to 14% cents, cost insurance and freight, European points, but few orders placed recently have been booked over 14 cents, cost, insurance and freight, by the largest interest.

Tin.

The production of Straits tin in April is given as 4,750 tons, and the carry over as 1,485 tons, while the May production is estimated at 5,650 tons, so that we may expect full shipments for the present.

Should the shipments from the Straits this month reach 7,000 tons, as estimated in some quarters, the visible supply of tin is likely to increase by about 2,500 tons.

As there have been only one or two occasions on record when the shipments were as much as 7,000 tons, it is difficult to believe that they will reach this amount this month.

But even 6,000 tons would make an increase in the visible, so the trade is prepared to see poor statistics.

Lead.

The present price of lead is stimulating ore production. The demand for ore shows no abatement of activity.

The official prices of the leading interest are unchanged at 5½ New York and 5.25 cents per pound St.

Louis, while in the outside market, sales as high as 55% cents New York and 5.45 cents in St. Louis are reported.

There were 150 tons of lead and 15 tons of base bullion received here from Mexico at the beginning of the week.

Solder.

Solder prices now in effect in the Chicago market are as follows:

Warranted, 50-50, per 100 pounds, \$21.50; Commercial, 45-55 per 100 pounds, \$20.00; and Plumbers', per 100 pounds, \$18.75.

Zinc

The zinc market continues strong and firm at 5.15 cents for St. Louis, but a premium of $2\frac{1}{2}$ points for each succeeding future month is now asked.

An encouraging feature is the recent improvement in the demand for brass special and the higher grades.

A part of this has been for rolling but there has been demand from the brass mills also.

The stocks of scrap are being more rapidly reduced with the improved activity in brass products and orders for brass special are helping to swell the total consumption of virgin slab.

There is a disposition on the part of the ore producers to increase their output and a considerable number of properties are slowly moving back to active and regular production, after a long period of inactivity.

Just how much the production will be increased by these additions can not yet be forecast but sufficient is already noted to indicate an increase of 1,000 to 1,500 tons, or from 8,500 tons to 9,000 tons output.

It is evident, therefore, that even though purchases are likewise increasing there is not going to be very much further absorption of the surplus stocks with such a production current.

Sheets.

The sheet mills are probably running at more than 75 per cent of capacity.

The leading interest is in more or less the same position as the independents, having had heavy bookings in April and being sold up at its present operating rate into July.

The company has had a schedule for weeks past of operating 90 per cent of its sheet mills.

The average buyer is pressing the mills for better deliveries. Not a few buyers are in the market for additional tonnages.

There is, however, a disinclination to pay advanced prices.

A half dozen or more mills have been quoting prices \$5 to \$7 a ton above the regular figures, and presumably they are disposed to make early shipments at their prices, but it does not appear that the sales at higher prices involve any large tonnage.

Tin Plate.

For some time past a number of independents have been quite in favor of the market price being advanced, say 25 cents a box, not less, but this desire is hardly as widespread as it was.

There has been no indication that the leading interest is in favor of making an advance over the \$4.75 price, and there are some important independent producers who hold much the same view.

A point in the matter is that with the disappearance of rather heavier concessions from the standard price than used to be made before the war there has been in essence an advance in the market already.

There is no question, of course, but that costs have been increasing, and costs are practically certain to be higher in the third quarter, chiefly on account of sheet bars.

A rough guess would be that the difference in sheet bars between first quarter and third quarter will run about 25 cents a box.

Much of this, however, would be absorbed should the mills secure the full \$4.75 for third quarter deliveries against the prices they realized on first quarter shipments, if the low export sales are included in the reckoning.

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$15.50 to \$16.00; old iron axles, \$21.50 to \$22.00; steel springs, \$15.50 to \$16.00; No. 1 wrought iron, \$13.50 to \$13.00; No. 1 cast, \$15.50 to \$16.00 all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 8 cents; light brass, $4\frac{1}{2}$ cents; lead, 4 cents; zinc, $2\frac{1}{2}$ cents; and cast aluminum, 11 cents.

Pig Iron.

Pig iron melt is increasing satisfactorily. Foundries throughout

the country are getting into better production, many of them being exceedingly busy and some report that they are securing better prices for their castings.

No single industry is responsible for the improvement, but apparently the entire country is moving up to a more active, normal basis. Even the machine toolmakers feel the revival.

Business in the New England States, however, is retarded. There, strikes in five lines of endeavor are the chief cause. These include the important textile, shoe, granite and foundry industries.

Considering the heavy selling of the past few weeks, it is not at all surprising that orders have fallen off generally.

Furnaces are pressed for shipments against existing contracts and stocks are decreasing.

Steel Mills Are Well Sold Up for a Time and Buyers Requirements Are Fairly Well Covered.

Activity in Structural Fabricated Steel Is Calling for Heavy Shipments of Bars, Plates, and Shapes.

AS A WHOLE, the steel mills are well sold up for a time and buyers' requirements are fairly well covered.

Of course, the mills may not be completely sold up and buyers' requirements may not be exhaustively covered.

If there is a difference in this respect in favor of sellers the fact will be brought out by purchases being made at premium prices.

There has been much quoting of premium prices, but thus far the tonnage turnover at extra prices has been light.

The actual trading market will now furnish the crucial test.

Activity in fabricated structural steel is calling for heavy shipments of bars, plates and shapes but fabricating shops generally have covered requirements for several months, as well as railroad shops.

It is estimated that structural contracts throughout the country now pending amount to 150,000 to 200,000 tons, two-thirds of which is developing in the eastern district.

The sales have been very large, particularly in March and April, and steel deliveries to date have been very large.

The finished steel deliveries in the first five months of the year, to the end of this month, will amount to about 10,000,000 gross tons, or at the rate of 2,000,000 tons a month, with shipments now proceeding at 2,400,000 tons, while production in the whole of last year was probably slightly under 15,000,000 tons.

Thus there appears to have been a very fair movement to date, suggesting that steel has accumulated in buyers' hands.

No one supposes that buyers have been drawing upon stocks since January 1st, the common testimony being that there were no stocks then, while the common idea in the trade is that buyers have been replenishing stocks.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS	HARDWARE, SHEET	Countersink,	CARRIERS.
	METAL SUPPLIES	American Snailhead 1 75	Diamond, Regular each, nets
PIG IRON.	WARM AIR HEATER		CASTERS.
Chicago Foundry 23 00	FITTINGS AND AC-	Russel Jenningsplus 20%	Standard-Ball Bearing.
Southern Fdy. No. 2, 24 16 to 25 16 Lake Sup. Charcoal29 06		Gimlet. Standard Double Cut Gross \$8 40	Bed
Malleable23 00		Nail Metal Single CutGross \$4 00—\$5 00	Brass Wheel
	ADZES.	Reamer.	new list
FIRST QUALITY BRIGHT	Coopers'.	Standard SquareDoz. \$2 50 American Octagon " 2 50	Philadelphia Plate, new
TIN PLATES.	Barton's Net White's Net	Screw Driver.	list
Per Box		No. 1 ComomnEach 18c No. 26 StanleyEach 70c	No. 160Sper doz. \$12 25
IC 14x20 112 sheets \$10 00 IX 14x20 11 25		BLADES, SAW.	No. 1658
XX 14x20 12 60	Loaded with Smokeless	Atking ou-in.	American Seal, 5 lb. cans, net \$0 45
XXX 14x20 13 90		Nos 6 40 26 \$8 90 \$9 45 \$5 40	American Seat, 5 lb. cans, 1et 30 45 " " 10 lb. cans, " 90 " " 25 lb. cans. " 187 Asbestos, 5 lb. cans. " 45 Pecora, 5 lb. cans. " 45 " 10 lb. cans. " 90 " 25 lb. cans. " 187
XXXX 14x20 15 25 C 20x28 20 00	Smokeless Repeater	Nos 6 66 26	Asbestos, 5 lb. cans 45 Pecora. 5 lb. cans 45
X 20x28 22 50	Smokeless Leader	59 45 \$10 05 \$9 45	" 10 lb. cans " 90
XX 20x28 25 20	Grade	Wooden20%	CHAINS.
XXX 20x28 27 80	U. M. C.	Patent20%	Breast Chains.
XXXX 20x28 30 50	U. M. C. Nitro Club20 & 4% Arrow20 & 4% New Club20 & 4%	BLOW TORCHES (See Firepots).	With Slidedoz. pairs, \$5 50 Without Slide " 5 06
CONT. DI ATTIC	New Club20 & 4%	BOARDS.	With Slide. 5 06 Doublestack . 5 06 With Covert Snaps 6 33 Picture Chains.
COKE PLATES.	Gun Wads—per 1000.	Stove. Per. Doz. 26x26, wood lined\$14 45	Picture Chains. Light brass, 3 ft., per doz. 1 25
Cokes, 180 lbs 20x28 \$11 80 Cokes, 200 lbs 20x28 12 00	Winchester 7- 8 gauge 10&7 1/2 % % 9-10 gauge 10&7 1/2 %	28x28, " " 16 95	Heavy brass, 3 II. 175
Cokes, 214 lbsIC 20x28 12 35	" 11-28 gauge 10&7 1/2 %	26x26, paper lined 8 15	Steel new 100 ft
Cokes, 270 lbsIX 20x28 14 10	ASBESTOS.	26x26, paper lined 8 15 28x28, " 9 10 30x30, " 10 80	0\$2 50 2 3 10
	Paper up to 1/166c per lb. Rollboard64c per lb.		1 2 60
BLUE ANNEALED SHEETS.	Rollboard	(single)per doz. \$5 25 No. 652, Banner Globe	Champion Metal. 0R 5 40 2R 5 50
Baseper 100 lbs. \$3 38	sq. ft. to roll)\$6.00 per roll	(single) per doz. 675	2R 1R Champion Metal.—Extra Heavy. 1H \$9 50 Cable Sash Chains.
	AUGERS	No. 801, Brass King, per doz. 8 25 No. 860, Single—Plain	Champion Metal.—Extra Heavy. 1H\$9 50
ONE PASS COLD ROLLED BLACK.	Boring Machine40&10% Carpenter's Nut50%	Pump 6 25	Cable Sash Chains. SteelList Net Plus 15%
o. 18-20per 100 lbs. \$4 10	Hollow.	BOLTS. Carriage, Machine, etc.	CHALK CARPENTERS'.
o. 22-24per 100 lbs. 4 15	Bonney'sper doz. \$30 00 Post Hole.	Carriage, Machine, etc. Carriage, cut thread, %x6 and sizes smaller and shorter	Blueper gro. \$2 00 Red
o. 26per 100 lbs. 4 20	Iwan's Post Hole and Well	shorter60 & 5%	White
o. 27per 100 lbs. 4 25	Vaughan's, 4 to 9 in., with-	Carriage sizes, larger and longer than %x650 & 10%	Clayon tities of
o. 28per 100 lbs. 4 30 o. 29per 100 lbs. 4 40	out handles per doz. \$14 00	Machine. %x4 and sizes small- er and shorter 60 & 10 & 5%	In bagsper bag \$1 80
	AWLS.	Machine, sizes larger and longer than %x460 & 5%	CHECK, DOOR.
GALVANIZED.	No. 3 Handled per doz. \$0 65 No. 1050 Handled " 1 40	Stove80%	Corbin
o. 16per 100 lbs. \$4 55	Patent asst'd, I to 4 " 35	Mortise, Door. Gem, iron	Cold.
o. 18-20per 100 lbs. 4 76	Commonper doz. \$1 05	Gem, bronze plated5% Barrel,	Good quality, % in., each \$0 44
o. 22-24per 100 lbs. 4 85	Patent " 1 00	CastNet	Good quality, % in., each \$0 44 ½ in., 0 22 Diamond Point. V. & B. No. 15, ½ in 0 23 V. & B. No. 15, ½ in 0 48 Firmer Bevelled.
o. 26per 100 lbs. 5 00 o. 27per 100 lbs. 5 15	Peg. Shouldered " 1 60	Wrought "Wrought, bronzed"	V. & B. No. 15, ¼ in 0 23 V. & B. No. 15, ½ in 0 48
o. 28per 100 lbs. 5 30	A determent	Flush. WroughtNet	Firmer Bevelled. Round Nose.
o. 30per 100 lbs. 5 80	Scratch. No. IS, Socket	Spring.	V. & B. No. 65, ¼ in 0 33 V. & B. No. 65, ½ in 0 44 Socket Firmer.
	Handledper doz. \$2 50 No. 344 Goodell-	Wrought "Wrought, heavy "	Socket Firmer.
BAR SOLDER.	Pratt, list less35-40% No. 7 Stanleyper doz. \$2 25	Square.	V. & B. No. 50, % in 0 29 V. & B. No. 50, % in 0 64
arranted.	AXES.	Wrought " BOXES,	V. & B. No. 50, % in 0 64 CHUCKS, DRILL.
50-50per 100 lbs. \$21 50	First Quality, Single	Mail. No.: 2 4 10 Per doz.:\$18 00 \$23 00 \$29 00	Goodell's, for Goodell's Screw
ommercial. 45-55per 100 lbs. 20 00	Bitted (unhandled), 3 to 4 lb., per doz\$11 00	Cast Iron.	DriversList less 35-40% Yankee, for Yankee Screw
umbersper 100 lbs. 18 75	Good Quality, Single Bitted, same weight, per	Per doz\$9 50	CHURNS.
	doz 10 00	Mitre. Stanley's Net Prices	Anti-Rent Wood
ZINC.	BALANCES, SPRING.	Stearns, No. 2. per doz. \$48 00	Gal 5 7 10 Each \$3 00 \$4 60 4 85 Belle, Barrell 65 & 7½ %
Slabs 5 75	Universal. Sight SpringList less 25%	Goodell-Pratt No. 408\$4 60	Belle, Barrell65 & 71/2 % Common Dash,
	StraightList less 25%	" No. 410 4 80 " No. 412 5 00	Gal
SHEET ZINC.	BARS, WRECKING.	V. & B. No. 444 8 in 4 65 V. & B. No. 333 8 in 4 30	CLAMPS.
sk lots, stock8½c	V. & B. No. 12 \$0 45 V. & B. No. 24 0 75 V. & B. No. 324 0 80 V. & B. No. 30 0 85 V. & B. No. 30 0 85	V. & B. No. 222 8 in	Adjustable. Martin's30%
ess than cask lots9	V. & B. No. 324 0 80 V. & B. No. 30 0 85	V. & B. No. 111 8 in 3 05	No. 63, Screw20%
	V. & B. No. 330 0 90	BURRS, RIVETING.	Cabinet. Screw20% Carpenters'.
COPPER.	BEVEL, TEE,	Copper Burrs only50% Tinners' Iron Burrs onlyNet	Carpenters'. Steel Bar. List price plus 20%
pper Sheets, base20c	Stanley's Rosewood handle, new listNets	Steel, antique copper or dull	Carriage Makers'.
TEAD	Stanley iron handleNets	hrass finish—case lots—	5 - 11 14 00
LEAD.	BINDING CLOTH.	3½x3½per dozen pairs \$2 75 4x4 Heavy Bevel steel inside	12 - " " 42 00
nerican Pig	Zine	Heavy Bevel steel inside sets, case lots—	Sherman's brass. W-inch
	Brass, plated	Steel bit keyed front door	per doz\$0 48 Double, brass, %-inch, per
eet.	Auger. BITS.	sets, each	0.02 1 20
Full Colls Der 100 Ibs. X 00	AUFF.	wrought brass bit keyed	Saw Filers.
Full coilsper 100 lbs. 8 00 Cut coilsper 100 lbs. 8 25	Jennings PatternNet	front door sets, each 3 25	Wentworth's, No. 1, \$12.50; No.
	Jennings PatternNet Ford Car25% off Ford's Ship25% off	Cylinder front door sets,	Wentworth's, No. 1, \$12.50; No. 2, \$18.25; No. 3, \$16.25.
	Jennings PatternNet Ford Car25% off Ford's Ship25% off	Cylinder front door sets,	Wentworth's, No. 1, \$12.50; No. 2, \$18.25; No. 3, \$16.25. CLAWS, TACK. Wood hdl. No. 10. per doz. \$1 15
TIN. r tinper 100 lbs. 8 25	Jennings PatternNet	Cylinder front door sets,	Wentworth's, No. 1, \$12.50; No. 2, \$18.25; No. 3, \$16.25. CLAWS, TACK. Wood hdl. No. 10. per doz. \$1 15 Forged steel, wood hdl. 2 15 Solid steel 2 25 Giant 50

CLEVISES.	FACES, WOOD-50% off list.	Tinner's Riveting, No. 1, 8	Clothes Line.
Malleable10c lt	FENCING.	oz., each 80	Japannedper doz. 35c—1 0 Galvanized 65c—2 2
CLIPPERS.	Lawn fence, single space, 36-inch\$ 9 12	Shoe, Steel, No. 1, 13 oz., each	
Bolt (Carolus). No. 0\$2 5	Lawn fence, single space,	Tack.	Conductor flooks20-109
No. 1	42-inch 10 20 Lawn fence, double space,	No. 5, each 1 00	MilcorNe
CLIPS.	32-Inch	HAMMERS, HEAVY.	Common, riveted, red, per dz. Ne
Axle	42-inch	Farriers'20%	CITHER,
Damper. Acme, with tail pieces,	42-inch	Mason's. Single and Double Face50%	Common Nos 1 9 5 F
per doz	Same, 6 filling 33 82	HANDLES.	Hammock,
per doz 2	Field fence, 32-inch, No. 10	Agricultural Tool,	With plateper doz. \$1 00
Non Rivet Clips 96	top and bottom 12 filling 30 34 Same, 6 filling 39 41	4%-inch, plainper doz. \$3 50 Auger.	With screw 50%&50%&10% Picture
COLLARS, STOVE PIPE.	FILES AND RASPS.	Common Assorted, per doz. \$0 75	
Lacquered.	Heller's (American)70% American70%	Pratt's Adjustable, Nos. 1 & 2, per doz 6 00	HOSE.
Inches 5 6 7		Ives' Adjustableper set 1 35	%-inch molded reel13%
Fancy pattern, per doz65c 75c \$4 00	Eagle	Axe. Hickory, No. 1per doz. 3 00	%-inch molded reel13%c %-inch 3 ply duck13%c %-inch 4 ply duck16c
COMPASSES.	Eagle	Hickory, No. 1per doz. 3 00 Hickory, No. 2 2 00 1st quality, second growth 6 00	%-inch 5 ply multiple10%c
COPPERS—Soldering	Kearney & Foot60 & 10% McClellan60 & 10%	Special white, 2nd growth 4 50	IRONS.
COPPERS—Soldering. Pointed Roofing.	McClellan	Chisel.	Sud.
3 lb, and heavierper lb. 40c	Simonds	Assortedper doz. 55c Hickory, Socket Firmer,	Charcoalper doz. \$11 00 Common, polished, per
01/ 16 450	X FNet List		No 70 Auborton #1 50 mot
1½ lb 550		Coal Pick	No. 100 " 1 75 net
CORD.	East of west boundry line of	File, assortedper doz. 30c	Common, nickel plated 8 25 Mrs. Pott's,
Picture. White Wire60 & 5%	No. Dakota, So. Dakota, Ne-	Hammer and Hatchet.	No. 50 J. Enterprise, per set Nets
Sash.	braska, Kansas, Oklahoma,	No. 1, per doz\$0 80 Second growth hickory, per	No so T
Spot No. 7per lb. 65c	Amarillo, San Angelo and La- redo, Texas	Hay and Manure Fork, Han-	No. 55 T, " " "
COTTERS, SPRING.	West of above boundry		
All sizes87 1/2 %	Turner Brass Works—	Screw Driver,	Wagon. Richard's No. 1 per doz. \$15 50
COUPLINGS, HOSE	No. 43 Kerosene-Gasolene Ea,	Assortedeach &c Shovel and SpadeNet	Oliver,
Brassper doz. \$2 25	Master Torch, 1 qt\$5 40		Each
CUT-OFFS Standard gauge35%	No. 48 Kerosene-Gasolene	HANGERS.	Standard,
26 gauge20%	Master Torch, 1 qt 6 73 No. 95 Double Jet Torch,	Door. MatchlessNet	Each
Glass.	No. 30 Kerosene-Gasolene	ReliableNet Richards25%	Nos 1 2 Big Lift
Red DevilNet	Torch, 1 qt. (new line). 6 48 No. 33 Single Jet Gasolene	Garage Door.	Tiger40%
Ment. Enterprise—Nos. 5 10 12	No. 33 Single Jet Gasolene Torch, 1 at	(See Garage Door Hdw.)	Brass
Enterprise—Nos. 5 10 12 Each\$2 50 \$4 25 \$3 75	Plumbers' Furnaces.	Conductor Pipe. Iwan's Perfection50% Milcor PerfectionNet	Cauldron40&5%
Enterprise—Nos. 5 12 Each\$2 50 \$4 25 \$3 75 Nos. 22 32 \$6 50 \$8 50	Torch, 1 qt	Eaves Trough.	Copper
Pine.	No. 63 Galv. Iron Tank	Steel hangers	Sugar50%
Saunder's, Nos. 1 2 3 Each\$1 85 2 75 6 75	No. 63 Galv. Iron Tank with Pump, 7 pts	Milcor EclipseNet	KNIVES.
Slaw and Kraut. Per doz.	Tank with Bulb, 7 pts. 8 82 No. 66 Straight Side Steel	Milcor Eclipse Net Milcor Triplex Net Milcor Milwaukee Net	Beet Topping. Clyde, 9-in. Scimiter Blade, doz
4-knife Kraut\$20 00-55 00	Tank, with Pump, 7 pts. 9 54 GALVANIZED WARE		doz25%
3-knife Kraut, 8x27 in	GALVANIZED WARE Per doz.	HASPS. Hinge, Wrought, with staples, Net	California25%
1-knife Slaw 2 50 2-knife Slaw 3 00	Pails (Competition), 8-qt1 65	HATCHETS.	Beechwood Handles, 6-inch
Washer 11 00	10-qt 1 85 12-qt 2 00	Per doz.	blade
DAMPERS, STOVE PIPE.	14-qt. 2 30 Wash tubs, No. 1 5 30 No. 2 6 00 No. 3 7 00	Size No. 2 extra quality broad	Beechwood Handles 3-inch
Diamond.	No. 2 6 00	Competitive Grade 12 00 No. 2 Warranted Shingling 12 00	blade 25% Cooper's Hoop. 25%
6-inchper doz. \$1 50 DIGGERS.	GARAGE DOOR HARDWARE	Competitive Forged 8 00	
Post Hole.	StanleyAll net	HAY RACK BRACKETS	Standard
Iwan's Split Handle (Eureka)	GAUGES.	Wenzleman's No. 1 per doz. sets \$18 00 Wenzleman's No. 2	Barton's Carpenters'25%
4-ft. Handleper doz. 15 00	Marking, Mortise, etcNets Wire.	Wenzleman's No. 2	Hay. Iwan's Solid Socket 25%
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00	Wire. Disston's25%	Wenzleman's No. 2 per doz. sets 19 20 HINGES.	Iwan's Solid Socket25% Heath's
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's25% GIMLETS.	HINGES, Blind.	Iwan's Solid Socket25% Heath's
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket 25% Heath's 25% Iwan's Sickle Edge 25% Iwan's Imp'd Serrated 25% Hedge
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket .25% Heath's .25% Iwan's Sickle Edge .25% Iwan's Imp'd Serrated .25% Hedge .25% Challenge .25% Disston's No. 1 .25%
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket .25% Heath's .25% Iwan's Sickle Edge .25% Iwan's Imp'd Serrated .25% Hedge .25% Challenge .25% Putty .25%
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% DRILLS. Bench. Blacksmiths' Twist (New List) 40%	Wire. Disston's	Blind. Clark's Gravity No. 1	Iwan's Solid Socket .25% Heath's .25% Iwan's Sickle Edge .25% Iwan's Imp'd Serrated .25% Hedge .25% Challenge .25% Putty .25% Common .25% Lander's .25%
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% BRILLS. Bench. Blacksmiths' Twist (New List) 40% Breast. Millers Falls No. 12, per doz. 345 50 Millers Falls No. 112, per	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket 25% Heath's 25% Iwan's Sickle Edge 25% Iwan's Imp'd Serrated 25% Hedge 25% Challenge 25% Disston's No. 1 25% Putty. 25% Common 25% Lander's 25% Seraping. Beech Handle 25% Lander's 25%
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% BRILLS. Bench. Blacksmiths' Twist (New List) 40% Breast. Millers Falls No. 12, per doz. \$45 50 Millers Falls No. 112, per doz. 32 00	Wire. Disston's 25% Discount 66% and 10% GLASS. Single Strength, A and B, all sizes 85% Double Strength, A and B, all sizes 85% Bulk. Bulk. B Amber per lb. 35c A white 40c H. S. Amber 22c	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's 25% Discount 66% and 10% GLASS. Single Strength, A and B, all sizes 85% Double Strength, A and B, all sizes 85% Bulk. Bulk. B Amber per lb. 35c A white 40c H. S. Amber 22c Liquid. Army & Navy 40%	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	## doz. sets 19 20 ## HINGES. Blind. Clark's Gravity No. 1 per set 45c No. 2 88c Gate. Clarks	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	### doz. sets 19 20 ####################################	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% BRILLS. Bench. Blacksmiths' Twist (New List) 40% Breast. Millers Falls No. 12, per doz. 32 00 Hind. Goodell's Automatic. No. 01. 20 03 16 00 03 16 00 03 17 00 00 00 00 00 00 00 00 00 00 00 00 00	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing	Wire. Disston's	### doz. sets 19 20 ####################################	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing	Wire. Disston's 25% GIMLETS. Discount 66% and 10% GLASS. Single Strength, A and B, all sizes 85% Double Strength, A and B, all sizes 85% Bulk. GLUE. Bulk. B Amber per lb. 35c A white 40c H S. Amber 22c Liquid. Army & Navy 40% Le Page's— List "A" 25 % List "B" 35 % List "C" 25 % GREASE, AXLE. Wood Boxes. Frazer's per gro. \$12 00 Hub Lightning 7 50	### doz. sets 19 20 ####################################	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's 25% Ciment 66% and 10% GLASS. Single Strength, A and B, all sizes 85% Double Strength, A and B, all sizes 85% Bulk. Bulk.	### doz. sets 19 20 ####################################	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	### doz. sets 19 20 ####################################	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% BRILLS. Bench. Blacksmiths' Twist (New List) 40% Breast. Millers Falls No. 12, per doz. 22 00 Hand. Goodell's Automatic. No. 01. each \$1 60 No. 03. 2 00 Goodell-Pratt No. 4½ 3 00 Goodell-Pratt No. 379. 4 00 Reciprocating. 3 20 Reciprocating. 3 20 Reciprocating. 3 20 Brivers, SCREW. Standard Nets EAVES TROUGH. 75 and 15% of Standard List. Milcor Nets ELBOWS—Conductor Pipe. Galvanized Steel. Tin and Terne	Wire. Disston's	### ### ##############################	Iwan's Solid Socket
4-ft. Handleper doz. 15 00 7-ft. Handleper doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% BRILLS. Bench. Blacksmiths' Twist (New List) 40% Breast. Millers Falls No. 12, per doz. 22 00 Hand. Goodell's Automatic. No. 01. each \$1 60 No. 03. 2 00 Goodell-Pratt No. 4½ 3 00 Goodell-Pratt No. 379. 4 00 Reciprocating. 3 20 Reciprocating. 3 20 Reciprocating. 3 20 Brivers, SCREW. Standard Nets EAVES TROUGH. 75 and 15% of Standard List. Milcor Nets ELBOWS—Conductor Pipe. Galvanized Steel. Tin and Terne	Wire. Disston's	### ### ##############################	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz 18 00 Dividers, Wing	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% BRILLS. Bench. Blacksmiths' Twist (New List) 40% Breast. Millers Falls No. 12, per doz. 32 00 Hand. Goodell's Automatic. No. 01 each \$1 60 No. 03 2 00 Goodell-Pratt No. 4½ 3 00 Goodell-Pratt No. 379 " 4 00 Reciprocating. Goodell's 3 20 Reciprocating. Goodell's No. 12, per 100 Reciprocating. Goodell Tratt No. 100 Reciprocating. 100 Reciprocating. 100 Reciprocating. 100 Conductor Pipe. Galvanized Steel, Tin and Terne Plain Round or Round Corrugated 2 to 6 inch, 26 gauge 45% 2 to 6 inch, 26 gauge 15% Milcor Net	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% Bench. Blacksmiths' Twist (New List) 40% Breast. Millers Falls No. 12, per doz. 32 00 Hand. Goodell's Automatic. No. 01 each \$1 60 No. 03 2 00 Goodell-Pratt No. 4½ 3 00 Goodell-Pratt No. 379 " 4 00 Reciprocating. Goodell's 3 20 Reciprocating. Goodell's 3 20 Reciprocating. Goodell's Nets EAVES TROUGH. 75 and 15% of Standard List. Milcor ELBOWS—Conductor Pipe. Galvanized Steel, Tin and Terne Plain Round or Round Corrugated 2 to 6 inch, 26 gauge 45% 2 to 6 inch, 26 gauge 45% 2 to 6 inch, 26 gauge 45% Milcor Net Square Corrugated. Standard gauge 50% Standard gauge 50% Standard gauge 50% Standard gauge 55% Standard gauge 55%	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% Bench. Blacksmiths' Twist (New List) 40% Breast. Millers Falls No. 12, per doz. 32 00 Hand. Goodell's Automatic. No. 01 each \$1 60 No. 03 2 00 Goodell-Pratt No. 4½ 3 00 Goodell-Pratt No. 379 " 4 00 Reciprocating. Goodell's 3 20 Reciprocating. Goodell's 3 20 Reciprocating. Goodell's Nets EAVES TROUGH. 75 and 15% of Standard List. Milcor ELBOWS—Conductor Pipe. Galvanized Steel, Tin and Terne Plain Round or Round Corrugated 2 to 6 inch, 26 gauge 45% 2 to 6 inch, 26 gauge 45% 2 to 6 inch, 26 gauge 45% Milcor Net Square Corrugated. Standard gauge 50% Standard gauge 50% Standard gauge 50% Standard gauge 55% Standard gauge 55%	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern,	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	## HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	## HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz	Wire. Disston's	## HINGES. Blind. Clark's Gravity No. 1	Iwan's Solid Socket
4-ft. Handle. per doz. 15 00 7-ft. Handle. per doz. 20 00 Iwan's Hercules pattern, per doz. 18 00 Dividers, Wing 25% BRILLS. Bench. Blacksmiths' Twist (New List) 40% Breast. Millers Falls No. 12, per doz. 32 00 Hind. Goodell's Automatic. No. 01. each \$1 60 No. 03. "2 00 Goodell-Pratt No. 379. "4 00 Goodell-Pratt No. 379. "4 00 Reciprocating. Goodell's 320 BRIVERS, SCREW. Standard Nets ELBOWS—Conductor Pipe. Galvanized Steel. Tin and Terne Plain Round or Round Corrugated 2 to 6 inch, 25 gauge 45% 2 to 6 inch, 26 gauge 15% Milcor Net Square Corrugated. Standard gauge 50% Milcor Net ELBOWS—Stove Pipe. 1-piece Corrugated, Uniform Doz. 5-inch 150 C-inch 130 Special Corrugated. Doz. 6-inch 160 Uniform, Collar Adjustable Doz. 6-inch 160 Uniform, Collar Adjustable	Wire. Disston's	## ## ## ## ## ## ## ## ## ## ## ## ##	Iwan's Solid Socket

LINES.	PAPER.	POINTS, GLAZIERS. No. 1, 2 and 3per doz. 750	RIVETS.
Juteper lb. 25 Sisal	C Roofing. Per square Mayor, 1-ply\$1 3:		Coppered Iron 500
Sisal	c " 2-ply 2 2 2 6 3-ply 2 6	POINTERS, SPOKE, Stearns' No. 1 per doz. \$10 00 No. 2 " 12 00	Hame per lb to 17
Bricksper crate 42	Red Rosin per ton \$111 40	POKERS, STOVE.	Slotted Clinch per doz. 60 @ 1 10 Tubular.
Barn Door.	No. 1 per ream, best grade \$5 40 No. 1, per ream, cheaper	Wr't Steel, str't or bent,	Nos. 1 and 2 assorted sizes.
No. 60 Stearnsper doz. \$12 00 No. 80 " 24 00	Potato.	Nickel Plated, coll hanl's " 1 10	Nos. 1 and 2 assorted sizes,
Riveting. MACHINES	Goodell's Saratoga, 10 1/4 in., doz 6 50	PRESSES, FRUIT AND JELLY Enterprise Manufacturing Co, 25%	ROPE.
Stearns No. 1per doz. \$16 00 Tenoning.	Goodell's Saratoga, 5 in., doz 5 50	PRUNERS.	Cotton
		Disston's Poleper doz. \$18 00 Water's Improved, per doz. 60%	per lb
No. 50 Peace's Spoke, each \$16 00 MALLETS. Carpenters'. Fibre Head, No. 2 per doz. \$16 50	Adze Eye Ore22 ½ % Drifting and Poll Picks22 ½ % Plumbs, Railroad22 ½ %	Nail. Giantper doz. \$14 50 Never-Slip " 17 00	Der ID.
Fibre Head, No. 2 per doz. \$16 56 No. 3 19 56 No. 4 28 56	Surface22 1/2 %		1st Quality, base 14 ½c to 15 ½c No. 213c to 14c
Round Hickory	Carpenters', cast steel,	Awning—Jap'd10%	Manila. 1st Quality standard
Tinners'. Hickoryper doz. \$2 25	No 5 8 10 14	Clothes Line10%	brands17½c to 18½c No. 216c to 16½c
Door. MATS.		Hay Fork.	Hardware Grade per lb 191/a
National Rigid5&10&5% Acme Steel Flexible50%	Clothes.	Iron Wheel, 5-inper doz. \$2 50 Wood Wheel, 6-in. 2 65 Wood Wheel, 6-in., pass knot 3 00	Pure Manlia. 1st Quality, base, per lb17%c to 18%c Hardware Grade, per lb. 11%c
MEASURES. Galvanized, dozNets	Common, per box of 5 gro. \$0 95	pass knot " 3 00	Hardware Grade, per lb. 11 4c
Japanned, dozNets	Fluted, 15-inper doz. \$1 10 Fluted, 21-in 1 60 Spiral 1 90	Sash. CommonNet	Butchers'. SAWS.
Galvanized steel mitres, and caps, end pieces, outlets30%	PIPE.	Empire Pattern, 2-inNet	Atkins No. 2, 14-in\$12 26
MilcorNet	Plain Round and Round Corra-	Ideal	" No. 7, 16-in 13 70 " No. 7, 16-in 15 20 " No. 7, 22-in 15 26 " No. 7, 20-in 17 30 " No. 7, 24-in 19 35 " No. 7, 28-in 21 40
Cetton, Star (Cut Ends). Pounds 12' 15' 18' 24'-3-oz.	gated. 29 Gauge70&5%	Spray.	No. 7, 20-in 17 30
Cetton, Star (Cut Ends). Pounds 12' 15' 18' 24'-3-oz. Per doz. \$4 00 4 35 5 50 7 00 Enterprise	28	Midget Juniorper doz. \$3 75	" No. 7, 28-in 21 40
Parker	Square Corrugated A and B and Octagon.	New Misty " 6 00 Crescent " 6 50	Compass. Atkins No. 2, 10-in\$ 4 95
Cut Steel	99 Cauge 70&5%	PUNCHES. Conductors.	Atkins No. 2, 10-in\$ 4 95 " No. 10, 10-in 5 10 " Blades, No. 2, 10-in. 2 95 " No. 2, 10-in. 3 00
Wire. Common 3 00 Cement Coated.	28	No. 22per doz. \$3 00	Cross-Cut
Small Lots 2 65	Prices for Galvanized Toncan Metal, Genuine O. H. Iron, Lyon- more Metal and Keystone C. B.	Machineper 1b. 25 Saddlers'.	Atkins No. 221, 4-ft 2 70 " No. 221, 6-ft 4 10 " No. 221, 8-ft 5 45
Horseshoe. Ausable	on application.	Common. per doz. \$1 50 to \$5 00 Revolving Spring.	Flooring.
Ausable	Plain Round and Round Corrugated.	Stearns, No. 10. per doz. \$ 8 00 " No. 40. " 16 00 " No. 60. " 19 00	Atkins No. 96, 16-in 19 95 No. 96, 20-in 21 85
Picture	29 Gauge	No. 60 " 19 00 Parker Metal Punch No.	Hand and Rip. Atkins No. 54, 20-in 17 75
Brass Heads	Square Corrugated A and B Polygon and Octagon.	OXeach \$7 00 Whitney's Ball Bearing.	No. 53, 16-in 16 45
FurnitureList plus 15% NETTING, POULTRY.	29 Gauge	Prices on application	Atkins No. 54, 20-in. 17 75 "No. 54, 26-in. 22 10 "No. 53, 16-in. 16 45 "No. 53, 20-in. 20 80 "No. 53, 24-in. 24 20 "No. 53, 28-in. 28 60
Galvanized before weaving50% Galvanized after weaving40%	26 "	Apple. PARERS.	" No. 53, 28-in 28 60 " No. 53, 30-in 31 95 Keyhole.
NIPPERS.	Milcor, all styles and gauges, Net	Goodell'sper doz. \$10 80 Turntable " 11 40	Atkins No. 1, complete 2 80 No. 2, complete 3 35
Berg's (Swedish) In. 5 Per dozen\$12 60 15 20	Standard Gauge. Crated and nested70&5%	Turntable " 11 40 White Mountain " 8 40 Reading No. 78 " 11 40	Miter Box
End and Diagonal Cutting. Berg's (Swedish) In. 5 6	Crated, not nested 70&5% Portico Elbows.	Commercial Putty, 100-lb.	Atkins No. 1, 4x20 29 70 " No. 1, 5x22 24 55 " No. 1, 6x22 38 35
Per dozen\$10 05, 13 00	Standard Gauge Conductor Pipe, plain or corrugated.	kits\$4 75	Pruning.
Heller's	Not Nested70&5% Nested solid70&5%	Garden RAKES. Per doz.	Atkins No. 20, 12-in 7 70 No. 10, 16-in 16 50
Hose.	Stove. Per 100 joints 26 gauge, 5 inch E. C.	Steel, Bow, 12-inch Teeth \$8 50 Steel, Bow, 14-inch " 9 25	Wood. Atkins No. 202 8 50 No. 318 10 05 No. 906 15 65 No. 1509 13 40
Magicper doz. \$9 59 Diamond 75	nested	Malleable Iron, 12-in. " 4 75 Malleable Iron, 14-in. " 5 00	" No. 906 15 65
Chase Pattern.	nested	Hay.	SCOOPS
Brass and Copper10% Zinc20%	nested	Wood, 10 Teeth\$4 00	Hubbard Western Pattern Riveted. Size A B C D
Railread. Coppered33 1/2 %	28 gauge, 6 inch E. C.	30 Teethper doz. 5 50	1 \$16 75 16 00 15 25 14 45 4 17 85 17 10 16 85 15 60
Steel. Copper Plated50-10-5%	nested	RAZORS—SAFETY.	· ·
OPENERS.	30 gauge, 5 inch E. C. nested	Gilletteper doz. \$45 00 Auto Strop " 45 00 Gem " 8 40	Box. SCRAPERS.
Can. Delmonicoper doz. \$1 30	nested	Gem (3 doz. lots) " 8 00	Triangular No. 6 per doz. \$6 25 Road.
Crate.	nested	Ever Ready " 8 40 Ever Ready (3 dz. lots) " 8 00	Cubic ft 7 5 3 With runners, ea. \$7 00 6 50 6 20
V. & Bper doz. \$7 25-11 00 PAILS.	6-inch	RAZORS—STRAIGHT.	SCREEN DOOR HINGES.
Cream. 14-qt. without gauge,	Double Wall Pine and Fit-	RAZOR STROPS. Star (Honing)	Cast irongross \$13 06 Steel 9 50
13-qt. without gauge,	tings	REGISTERS.	SCREWS.
20-qt. without gauge,	ripe, Shoes, etc	Cast Iron 30% Steel and Semi-Steel 50% Baseboard 50%	Bench. Iron, Ins. 1 1½ 1 1½ \$6 82 7 87 9 45 16 80
San.	Milcor. galvanizedNet PLANES.	Adjustable Ceiling Ventilators 50%	Wood, white maple, per doz. 6 00
10-qt., IC Tinper doz. \$4 00 5 50	Stanley Iron BenchNet PLIERS.	Register Faces—Cast and Steel Japanned, Bronzed and Plated. 4x6 to 14x14	Hand Rail
Stock. Galv. qts. 14 16 18 20 Per doz.\$9 75 10 75 12 75 14 50	V. & B. No. 6each \$0 57 No. 7 Gas 0 60 Double Duty 106. 0 56	Large Register Faces—Cast, 14x14 to 38x4265%	Jack
Water.	" Double Duty 106. 0 56 " Nut No. 3 0 64	Large Register Faces—Steel,	gimlet pointed65%
Galvanized qts. 10 12 14 Per doz\$5 75 6 50 7 25	Lineman's Side Cutting. Berg's	RIDGE ROLL,	Saw—Centennial, Nos 1 2 3 4 Per doz 47c 55c 75c 90c
Wood, Cable, 2-Hoopper doz. Nets	(Swedish), In. 6 7 8 Bik, Pol. Face.	Crated70-25%	Wood,
Cable, 2-Hoopper doz. Nets Cable, 3-Hoop "Nets Cedar, 3-Hoop, brass "Nets	doz\$10 70 20 00 23 35 Long Nose Side Cutting.	Wired70-25-5% MilcorNet	F. H. Bright, 82 16 16 16 16 16 16 16 16 16 16 16 16 16
DrippingNet	Berg's (Swedish) In. 5 6 Blk. Pol. Face, doz. \$12 25 15 20	Pull.	R. H. Blued 380% F. H. Jap'd 75 & 10 & 5% F. H. Brass 77½ & 10 & 5% R. H. Brass 75 & 10 & 5%
Fry. CommonNets	Flat and Round Nose	Copper	Sheet Metal.
Rossting.	Flat, In. 4 6 8 Blk. Pol. Face.	Piercing copper,	No. 7, ½x¼, per gross\$.55 No. 10, ¼x2/16 per gross75 No. 14, ¾x¼ per gross90
Paxton, Nos 1 2 3 4	Berg's (Swedish) Flat, In. 4 6 8 Bik. Pol. Face, Doz \$8 90 13 35 19 65 Berg's (Swedish)	Steel, per doz 1 50 1 80	No. 14, %x% per gross90
Per doz Nets Neverburn "	Blk. Pol. Face	Fruit Jar. Whiteper lb. 80	Clipper, Grassper doz. \$13 50
Savory, No. 200 per doz. \$8 40	Doz\$11 15 16 30 22 35	whiteper lb. 80	Honest Dutchman " 13 00

			0,
Nail.	Axe.	ADVERTIS	ERS' INDEX
Square headper doz. 1 84 Cup point, knurled " 1 78 Rivet.	wasnita "	The dash (-) indi	cates that the adver- appear in this issue.
Farmers'per doz. 2 50 Tinners' 3-4 5 75	No. 126per doz, New Nets Oil—Mounted.		Lalance & Grosjean Mfg. Co — Lamneck_Co., W. E
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Disston's Monarch No. 2 " 9 90 Disston's Monarch	Oil—Unmounted.	Apollo Metal Works	
No. 12	Lily White	Berger Bros. Co	Manualle Iron Range Co
Nash's X-Cut 4 20 Stillman's Lever 1 30	Washita "	Bullard & Gormley Co 48	Matthews Banner Range Co
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Hand No. 395,	LaMolle	Clark & Co., Geo. M	Michigan Stove Co., The — Milwaukee Corr. Co. Back Cover
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Japanned, Straight 6" 11 00 7" 12 40 8" 13 80	tern per doz. \$11 00 No. 11 Stearns pat- tern " 10 00	Association Brass Research	Peerless Fdy. Co
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No. A B C D 1 \$16 00 15 10 14 45 13 70 2 16 35 15 60 14 85 14 10 3 16 75 16 00 16 25 14 45	Malleable Ironper lb. \$0 10 Wrought Steelper gro. 4 50	Harrington & King P'fg Co. 45	Turner Brass Works2 Turton Furnace Co2.3 Tuttle & Bailey Mfs. Co9 Union Steel Products Co., Ltd.—
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